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# JOURNAL *of* FARM ECONOMICS

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# JOURNAL OF FARM ECONOMICS

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## FARM CREDIT AND GOVERNMENT<sup>1</sup>

E. C. YOUNG

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THROUGHOUT written history governments have had an interest in land and a policy with respect to the ownership and use of land that differed from their interest and policy with respect to the ownership and use of most other classes of property. Only in the comparatively short period of years between the breakdown of feudalism in western Europe and the World War did the free and unrestricted ownership and use of land exist in the sense to which we are accustomed in America. It appeared with the rise of democracies and may disappear with their fall. At no time even in the nineteenth century was free and unrestricted ownership of farm land universal throughout the civilized world. In all probability the easing of the pressure on population that accompanied the industrial revolution and the settlement of great new areas of farm land in the Americas and elsewhere are basic explanations of widespread unrestricted ownership of land by farmers.

The ownership of land in fee simple, the free and unrestricted right to possess and use land, forms the basis for agricultural credit. Farm mortgage credit has become the chief instrument to assist the individual farmer to buy and pay for a farm out of the earnings of the farm while he occupies and uses it. It has become the principal device to assist in the transfer of land from one generation to the next. It has made possible a process of economic selection of the fit among farmers and in the main has kept the ownership and

<sup>1</sup> This paper was presented before the Mid-West Economic Association at Davenport, Iowa, April 15, 1938.

possession of land in the hands of the best farmers. In these general respects, farm credit serves a purpose similar to credit in other areas in the capitalistic world.

The ultimate source of capital in farming is from accumulations out of earnings. When a period of satisfactory earnings is experienced, farmers accumulate capital. This is usually associated with rising land values, adequate farm improvements, adequate working capital, conservative farming and rising living standards. Farmers usually get out of debt relatively but not absolutely during such a period. Young men buy farms with substantial down payments. Farm owners retire at an early age. Farms change hands frequently and at increased values. In a period of falling prices and falling incomes or low prices and low farm incomes, the whole process is slowed down or reversed. We have been in such a situation since 1920. Earnings must continue to be the ultimate source of capital to buy and improve farms and pay off debts if farming as we know it is to continue in the United States.

Borrowing furnishes a temporary source of capital in farming, but, at least in theory, it is ultimately liquidated out of earnings. It permits the operator to acquire a farm and operate it advantageously before he has accumulated sufficient savings completely to finance the operation. Actually, during the last one hundred years under the system of land ownership common in democracies, the farm debt has increased with reference to total valuations. With the gradual emergence of semi-commercial farms, it has been continuously more difficult for a farmer, unaided by gift or inheritance, to pay for an efficient farm unit during his life time. Farm tenancy has increased as a necessary phase of this same process. In much of the world this situation, which had become very acute by the end of the World War, now lies at the basis of most of the programs for land reform. In the United States neither farm indebtedness nor tenancy has reached a stage that warrants the drastic remedies being employed in Europe and that have been seriously proposed in the United States. The problems of financing farming differ in certain essential respects from those in other industries and are at the root of the development of interest of governments in the field of farm credit.

The farm business unit is small compared with commercial enterprises although it compares favorably in size with other small unincorporated businesses. The total capital required per farm unit is small in most areas. The total average capital per farm for 718 farms on which financial records were kept in Indiana in 1936 was \$18,313. This is probably about twice the average capital per farm for the state since these farms average 202 acres in size. The small size of the business and the remoteness of the farm from credit centers formerly resulted in costly and inadequate financing through the usual channel. This was especially true in remote areas, in small farm areas, in low land value areas and in high risk areas. In almost all important agricultural countries this resulted in the development of cooperative credit agencies which have invariably degenerated into government controlled or operated credit agencies. This process will be discussed in greater detail later in the paper.

The rate of capital turnover in farming is slow. In the middlewest in normal times about eight years are required to make the sales on the average farm equal to the total farm capital. In comparison, grocery stores require a little over a month and hardware stores about four months to accomplish this turnover. Because of the slow turnover, farmers are subject to long term changes in the price level. Because of the unincorporated nature of the farm, this means that entire generations of farmers find themselves in possession of farms for which they paid too much in terms of the earning power during the period when they must liquidate the indebtedness incurred when the farms were bought. Conversely, entire generations of farmers find themselves in possession of farms under conditions that make the retirement of the indebtedness easy, during periods of rising prices. During the period from 1921 to 1934, farm incomes were low and land values were falling throughout most of the world. In the latter part of this period in almost every country, the government entered actively into the field of farm credit. In many countries and in parts of the United States the government now has a monopoly of agricultural credit. The monopoly was usually obtained by subsidy either in the form of overlending or in interest rates below the competitive market. In the early

stages this was invariably a farm relief measure. In most countries, particularly after the government became a principal factor in farm credit, the credit program became incorporated as an integral part of the program of social and economic reform that has invariably become the final objective of government farm relief measures.

The family is the unit of farm operation and the family income and expenses are usually mingled with the income and expense of the business. For this reason farm credit is essentially social as well as economic in its effects and in its administration. The family pledges itself to repay the loan. The wife as well as the husband signs the note and the ability of the wife and the thrift of the family are principal factors in the appraisal of the farm as a basis for credit.

The farmer being a producer of raw materials is subject to wide price fluctuation for his products. The individual farm output fluctuates within a wide range because of weather. This introduces a hazard not common in other businesses and makes it very difficult to estimate in advance, income, expense or credit requirements. It makes it difficult to estimate rate of repayment on loans and causes farmers to be reluctant to commit themselves to a hard and fast schedule of repayments.

The farm is not incorporated and its fortunes usually rise and fall with the fortunes of the operator. It is usually necessary to refinance each farm each generation. There is little opportunity under our system of farm ownership to continue the farm business without serious interruption from one generation to the next. Farming has become a semi-commercial enterprise which requires increasing outlays of capital. The rapid development in farm machinery and technology has required larger farm units and capital outlays beyond the financial limits of the family. This has brought about larger requirements for capital and created a situation which makes it virtually impossible for an average farmer to pay for a farm during his life time. As farming has become more complex, the farm has developed value as a going concern which must be sacrificed when the organization disintegrates with a change in ownership and tenure. As time goes on there is a growing demand in most countries for land reforms to facili-



tate the ownership of land and increase the stability of tenure.

With the development of larger capital requirements to operate a farm most advantageously coincidental with the general breakdown of competitive farm credit, a sharp divergence in policy has developed in most countries. Upon the entrance of governments into the field of credit, the developments in order of sequence in most countries have been as follows:

1. Breakdown in competitive commercial credit.
2. The government enters the farm credit field as a relief measure usually using the cooperative credit system as a means. Debt moratoria are common.
3. The cooperative credit system disappears except in name.
4. Other credit sources dry up and fail to re-enter the field after the emergency has passed.
5. Credit policy becomes fused with general government policy and emphasis shifts to social and political ends.
6. The land policy is formed to develop a small non-commercial, self-sufficient or peasant farm economy. Farm tenancy declines and farm indebtedness rises until farmers become essentially tenants of the state.

Closely related to the activity of governments in farm credit are their activities in land settlement and farm tenancy. Countries differing as widely as Argentina and Japan have inaugurated land settlement programs of striking similarity. The features common to most programs are the subdividing of large tracts and discrimination against the holders of tracts of land so large as to require the use of hired labor in their operation. This is one of the striking evidences of the change in the concept of farm relief from that of promotion of individual welfare to that of social welfare. The resettlement projects tend to multiply the number of holders of small farms. Such farmers are virtually as near the subsistence level as are hired laborers. In many countries, the restrictions placed on combination of farms and on large scale farming seem likely to make it difficult for a farmer to get much above the subsistence level. As the government's activity in farm credit increases in most countries the coordination with other programs of production control, land use, farm

subsidies and land settlement increases until in its final stage, as in Germany, it becomes part of a program which has completely changed the nature of agricultural economy and has resulted in the submergence of the individual farmer.

The history of farm credit in the Scandinavian countries may have a special significance for us in the United States.<sup>2</sup> In Denmark the land reform was accomplished without bloodshed and by a series of steps the first of which were similar to those already taken in the United States.

Beginning in 1899 and at frequent intervals since that time, laws have been passed in Denmark providing for government loans to individuals for acquiring land, constructing buildings and refinancing indebtedness. All of the laws have permitted the loans to cover a large part of the value of the property, usually up to 90 per cent. Interest rates have been low, especially for land purchase. The loans in recent years have been amortized over a long period.

By the law of May 14, 1934, the administration of government farm credit was placed under the direction of the new Minister of Agriculture. He is assisted by the Land Control Committee and other interested groups. Subsidiary local committees are responsible for local administration, selection of applicants and properties and dispossession of unqualified owners. Provision is made for acquisition of land by the state and for government loans to private cooperative associations formed for the purpose of aiding individuals to purchase property and pay debts. Allotments are made for family size farms of three to fifteen hectares.

One of the principal difficulties has come about because of the high price of land which resulted from the low interest rates and easy credits. The Danish Mutual Credit Associations and other lending agencies hold mortgages on Danish property at the present time estimated at 86 per cent of the total value of all agricultural property including buildings, livestock and equipment. In 1913 the indebtedness was 34 per cent and in 1932, 65 per cent of the estimated value of all farm property.

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<sup>2</sup> The descriptive material for Denmark and Germany was abstracted from "Foreign Crops and Markets," United States Department of Agriculture. The references used were too numerous for specific citation.

During the period since 1919, when the present program in Denmark had its beginning, farm tenancy has decreased rapidly until at present only six per cent of the farms are operated by tenants.

A financial guardianship has developed as a result of the farm credit and resettlement program of the last 17 years. This development seems more likely to increase than to diminish as evidenced by farm debt moratorium legislation and recent successful efforts to convert mortgage bonds to a lower interest rate basis. There is much agitation also for scaling down of land encumbrances by a systematic reduction in the value of mortgage bonds. It is evident that proprietorship of Danish land is following a cyclical course which now inclines toward the past.

In Germany the course of land reform and agricultural control has run a similar course to that of Denmark but has been carried further. The Nazi program for socialization of the land is well toward completion with the final evolution of the hereditary farms. The Hereditary Farm Legislation of 1933 affected about 50 per cent of the German farm land area. All farms from 7.5 to 125 hectares in size were declared to be hereditary farms which cannot be sold or mortgaged and against which foreclosure cannot be effected. The hereditary farm and all the property belonging to it or required for its successful operation, must remain in the hands of one and the same family and be inherited by one child, usually the oldest son. The other children have only minor claims on the farm. For example, it must be open to them as a refuge when in want and the heir must provide for the education of his brothers and sisters. Property of the farmer not belonging to the farm or required for its operation may be divided among the other heirs.

A more recent act which further increases the number of hereditary farms is the Modern Settlement Act of 1935. This provides for rural settlement, additional land settlement and suburban settlement. Roughly it extends the hereditary farm principle to care for additions to farms that are too small and for part-time farms.

This movement is an expression of the National Socialist ideology. According to this philosophy the Germanic people are the possessors of a peculiar genius and culture that or-

dains them for a mission in world leadership. This destiny traces back to the inborn love for and attachment to the soil as a generator and constantly flowing spring of new blood vigor and manpower. Agriculture, the land and the people on the land, therefore, in the minds of the Nazi theorists and formulators of policy, constitute the foundation and underlying source of strength with which Germans will regain their place in the sun and rise to new greatness.

Summed up the land policy has the following aims:

1. To assure farmers the greatest possible stability of land tenure.
2. To bring about the largest possible increase in agricultural production with self-sufficiency as the ultimate aim.
3. To restore and maintain "just" prices for farm products having in mind also stable prices for consumers.
4. To protect the country from non-germanic people and influences from the East.
5. To increase the number of farmers in the country. The government believes that farm owners are stable and permanent and a buffer against communism.
6. To increase the birth rate.
7. To care for a larger population. Small owners are expected to farm more intensively.
8. To eliminate tenants and the transient laborer class.
9. To enhance and consolidate the farm population as a bulwark of national socialism.

The lavish extension of credits to farmers through government agencies during the 1924 to 1930 reconstruction period created a situation which made the socialization of land in Germany acceptable to farmers in 1933.

In the United States the Farm Credit Administration has been the vehicle through which relief to indebted farmers has been administered. Through advances to the Federal land banks and through the creation of the heavily subsidized Production Credit system, the Farm Credit Administration has effectively absorbed the cooperative farm credit system in the United States.

In its actual administration, principally because of its personnel, it has striven continuously to preserve the cooperative credit system on a competitive business basis. The entire



structure has been built with a view to the ultimate liquidation of the Government's interest and the retirement of the Government to the role of supervisor. The Farm Credit Administration has fought continuously to hold government subsidy and operation to a minimum. However, the efforts of the administration to remove the interest and other subsidies have been defeated each time they have come before Congress. The seed loans have been continued and the Commissioner's loans have continued at lower interest rates and on more favorable terms.

In many of the poorer agricultural sections of the United States, the Federal Land Bank loans are in process of liquidation and new loans are almost exclusively government loans. If the present trend continues, certain of the Federal land banks will become little more than service agencies in making and administering Commissioner's loans. While the Farm Credit Administration has been successful in maintaining at least a semblance of competitive business credit in its own organization, it has lost heavily in the field of government credit outside its jurisdiction. In the Farm Security Administration a complete system of agricultural mortgage and production credit has been developed in competition with the Farm Credit Administration. Loans of government money are made by this organization on more favorable terms than those made by the Farm Credit Administration. The Commodity Credit Corporation also offers production credit loans on a favorable basis.

Since the Farm Security Administration and the Commodity Credit Corporation are under the direct supervision of the Secretary of Agriculture, it seems reasonable to expect that their activities will be closely correlated with the activities of the Land Use and Production Control Administrations.

Extension of credit by benevolent agencies such as the government is not credit in the true sense. If credit is not placed on a competitive business basis there is no true measure of the need for credit or of the amount that should be loaned for the good of the individual or the community. It is therefore subject to serious abuse and has usually been abused sooner or later. Probably the earliest development of

this type in the United States was the school fund mortgage now used in many sections primarily for vote getting. The Seed loan and the State Credit Bureaus in the northwest have had a similar history. The Rehabilitation loans and the Land Bank Commissioner's loans will likely have the same history. The results are loss to the government, drying up of other sources of credit and political abuse.

In 1935 the farm debt in the United States was approximately 25 per cent of the total value of all farm property and 42 per cent of the farms were operated by tenants. There are only scattered concentrations of land in the hands of non-resident owners. With this situation it seems unnecessary to employ the drastic remedies which are implied in the current policy of the Federal government. Based on the evolution of government credit operations in other countries, and the widespread political opportunism in the United States, it seems likely that developments in the United States may take a course similar to those in Europe during the next generation. However, an increase in farm earnings which may result from higher prices if world recovery takes place may postpone these developments indefinitely.

## SOCIAL WELFARE AND DIFFERENTIAL PRICES

GEORGE J. STIGLER

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THE formulation of the theory of subjective value in the eighteen-seventies by Jevons, Menger and Walras, was perhaps the most important landmark in the history of technical economic analysis. This movement led directly to the extensive investigation of the "demand" factor, and, what is more significant, indirectly (however slowly and uncertainly) to the modern theory of production and distribution. The writings of the subjective value theorists may be said to have ushered in the period of scientification in economics.

It is unfortunately true, however, that the theoretical "revolution" of the seventies possessed a common attribute of important innovations,—it introduced new errors when it corrected old ones. Certainly one of the most important of these new errors was the uncritical acceptance of hedonism which dominated the attitude of neo-classical economics toward economic policy and social ethics, especially in England. Edgeworth brilliantly employed the utility notion in numerous specific problems, for example, in public finance and in foreign trade theory, and Pigou systematized the policy implications in his great *Economics of Welfare*.<sup>1</sup>

The elaborate—and plausible—structure of social policy on the basis of pseudo-scientific hedonistic foundations has received numerous attacks in the postwar period,<sup>2</sup> particularly in the field of tax justice, which was heavily populated with sacrifice doctrines.<sup>3</sup> There are now indications that the more classic applications of utility theory are definitely on the defensive; we may hope for the increasing emancipation

<sup>1</sup> On the entire subject of the history of policy in economics, consult G. Myrdal, *Das Politischen Element in der nationalökonomischen Doctrinbildung* (Berlin, 1932), esp. Chap. v and vii.

<sup>2</sup> There were numerous criticisms of economic hedonism from the time of Cairnes, of course, but in the pre-war period most of these attacks came from economists unsympathetic to the theoretical tradition, e.g., Veblen. Pareto was the important exception.

<sup>3</sup> E. g., Lionel Robbins, *The Nature and Significance of Economic Science* (2nd ed.; London, 1935), pp. 136 ff.; and Henry C. Simons, *Personal Income Taxation* (Chicago, 1938), chap. i.

of economic literature from the tribulations that come from dependence on psychology and ethics.

All this is offered as setting for the appraisal of the suggestion of Dr. F. V. Waugh, in the last number of this JOURNAL,<sup>4</sup> that differential pricing be used in the marketing of certain basic agricultural commodities, in order to increase social welfare. His proposal is, in effect, a request that we introduce into our domestic price structure the same psychological and ethical system once popular in taxation and tariff theory.

This appraisal is not intended in any polemical sense: Dr. Waugh's article contains an unusually frank, temperate and able exposition of the case for discriminatory pricing policies. The subject is of such practical importance, and its implications for the role of theoretical analysis are so far reaching, that a general consideration of the problem of maximizing social welfare seems very much in order.

The following discussion will divide into two parts the analysis of the use of differential prices to increase social welfare. The contributions of price theory to the subject will first receive attention, and then certain general problems of application will be considered.

### *I. Price Theory and Differential Prices*

Differential prices will increase the sales value of a given quantity of a commodity when the elasticities of separable portions of the total demand differs significantly and (what amounts to the same thing) uniform prices will increase sales revenue when the marginal costs of the portions of supply sold in the various separable markets differ significantly. This theorem has long been established beyond question, although certain qualifications will be discussed presently.

To say, however, that a marketing policy which increases the sales value of a given stock of goods, necessarily increases also the social welfare of an economy, requires the substantial identification of social welfare and sales value. There are several major problems involved in this identification. Our first task is to define social welfare, and to relate it to sales value.

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<sup>4</sup> "Market Prorates and Social Welfare," pp. 403-16.



Social welfare is not defined explicitly by Dr. Waugh, but his acceptance of Walras' theorem of maximum satisfaction<sup>5</sup> and of Frisch's statistical work, must indicate that social welfare is the sum of the total utilities of the individuals within an economy. Can content be given to this notion?

Whether the utilities of various individuals can be summed, depends, quite obviously, on whether the individual's utilities are cardinally measurable, and, secondly, if these utilities are measurable, whether they are also comparable between individuals. Both of these conditions are indispensable to the hedonistic concept of social welfare.<sup>6</sup> At the outset, it is safe to assert that the belief in the cardinal measurability of utilities is now definitely anachronistic. Pareto first taught us,<sup>7</sup> and the lesson was emphasized by Oskar Lange,<sup>8</sup> Hicks and Allen,<sup>9</sup> and numerous others,<sup>10</sup> that it is impossible to go from conceptually observable data (demand curves) to the utility surface without introducing restricted and unreasonable assumptions. This conclusion is the well-nigh universal verdict of modern economics, and no one has a right to invoke the assumption of measurability of utilities until he has upset the reasoning involved.

Although it appears simply unquestionable that utilities cannot be measured, one may postulate (however unreasonably) their measurability.<sup>11</sup> There remains an equally impossible task, the comparison of the utilities of different in-

<sup>5</sup> In passing it should be noted that Walras was simply wrong. Granting even the measurability and comparability of utilities of various individuals, it is demonstrable that a single, competitive price will maximize satisfaction only if the marginal utility of money is equal for all people. Cf. Wicksell, *Lectures on Political Economy* (London, 1934) I, pp. 72 ff.

<sup>6</sup> The ethical system under consideration is of the type which Abram Burk in an interesting recent essay, labels the "Cambridge" type. Cf., "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics*, February, 1938.

<sup>7</sup> *Manuel d'économie politique* (2nd ed.; Paris, 1927), pp. 272 ff., 539 ff. Even Bentham was dubious about this measurability; cf. W. C. Mitchell, "Bentham's Felicific Calculus," reprinted in *The Backward Art of Spending Money* (New York, 1937).

<sup>8</sup> "The Determinateness of the Utility Function," *The Review of Economic Studies*, June 1934; cf. also subsequent numbers of *The Review*. The excellent treatment by F. Alt, "Über die Messbarkeit des Nutzens," *Zeitschrift für Nationalökonomie* (1936), pp. 161-69, should also be mentioned.

<sup>9</sup> "A Reconsideration of the Theory of Value," *Economica*, February, 1934.

<sup>10</sup> Consult in particular the fundamental discussion by Professor Knight, in *Risk, Uncertainty and Profit* (London School Reprints No. 16), chap. iii.

<sup>11</sup> As does Pigou, in *The Economics of Stationary States* (London, 1935), p. 3 and Appendix II.

dividuals. Jevons, who was in this respect more profound than his immediate followers, is still eminently quotable:

The reader will find, again, that there is never, in any single instance, an attempt made to compare the amount of feeling in one mind with that in another. I see no means by which such a comparison can be accomplished. The susceptibility of one mind may, for what we know, be a thousand times greater than that of another. But, provided that the susceptibility was different in a like ratio in all directions, we should never be able to discover the difference. Every mind is thus inscrutable to every other mind, and no common denominator of feeling seems to be possible.<sup>12</sup>

No one has ever offered a real defence for the practice of comparing utilities: the argument has always been that such a comparison *must* be permitted because it is necessary to certain conclusions regarding economic policy!<sup>13</sup>

But one might concede both the measurability and the comparability of utilities and still reject categorically the notion of social welfare. Utiles, that is to say, are sovereigns only over voluntary subjects. As Professor Simons has asked, in an interesting parable about a hypothetical society in which cephalic indices solved all quantitative utility problem,<sup>14</sup> is the end goal of human striving the amassing of utiles for the gratified contemplation of the possible residents of some other terrestrial body? It surely is unnecessary to emphasize the fundamental fact that only to the thorough-going hedonist—and few now seem willing to accept this role—are utilities and satisfactions the supreme arbiters of human behavior.

This discussion of the hedonistic concept of social welfare may seem unnecessarily protracted and academic, but it is crucial for the problem of differential prices. Dr. Waugh can-

<sup>12</sup> *The Theory of Political Economy* (4th ed.; London, 1911), p. 14. Jevons' practice, it is well known, was not so perspicacious.

<sup>13</sup> Wicksell offers a beautiful illustration of this point: "Pareto behauptet allerdings, dass der Nutzen verschiedener Personen 'heterogene Quantitäten' seien, die unmöglich miteinander verglichen können. 'No bridge, comme disent les anglais.' Ist aber dies richtig? Sind wir Menschen wirklich derart beschaffen, dass wir uns von den Freunden und Leiden unserer Mitmenschen überhaupt keine zutreffende Vorstellung bilden oder die Intensität derselben mit derjenigen unserer eigenen Empfindungen gar nicht vergleichen können? Wenn dem so wäre, was für eine materielle Unterlage gäbe es denn eigentlich für den Begriff der Gerechtigkeit, sei es in Fragen der Besteuerung, sei es sonst bei der sozialen Verteilung?" Cf., "Vilfredo Pareto's Manuel d'économie politique," *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*. XXII (1913), 142-43.

<sup>14</sup> *Personal Income Taxation*, pp. 13-14.

not conclude that "graduated" prices increase social welfare even granting all his quantitative results, unless he assumes (1) that farmers' dollars are more important than rich consumers' dollars, and (2) that farmers' dollars are just as important as poor consumers' dollars. These propositions appear, in the light of contemporary economic theory, to be, not unproved, but unprovable.

Granting that these propositions are questions of policy rather than of economic analysis, they may still be valid, that is, compatible with the ethical notions of the public. Progressive personal income taxation, which almost everyone endorses, is popular because it is "democratic." This is certainly an adequate basis, and one to which the writer fully subscribes. If Dr. Waugh can demonstrate an equally general acceptance of his two propositions regarding farmers and rich and poor consumers, that is certainly sufficient for the economist. The writer, for one, would question in particular the second proposition, but for the remainder of this paper both propositions are assumed to be acceptable. Henceforth, the discussion is restricted to the question of the efficacy of differential prices in accomplishing the simultaneous realization of the objectives of (1) increasing agricultural income and (2) subsidizing the poorer classes of consumers of basic agricultural products. Demand factors will be considered in detail, and then a few points concerning supply factors will be raised.

### *Demand Factors*

It is in order, first, to examine the demand conditions under which both of these objectives can be accomplished. The moot question of the availability of empirical demand curves will be examined subsequently. In general, differences in the demand elasticities of various separable portions of the market is a sufficient condition for increasing sales revenue by discriminatory pricing. Ignoring cost conditions for the moment, such a policy which has as its objective maximum revenue, will lead to increased sales (relative to simple monopoly) in the market with the more elastic demand, and relatively less sales in the market with the less elastic demand.

There arises, first, the question: is it proper to assume that

the demand of poor consumers is more elastic than that of rich consumers? Dr. Waugh answers this query in the affirmative, because the use of substitutes is held to be more common among poor consumers. This line of argument is plausible but by no means conclusive. We know of certain basic agricultural commodities, tobacco for example, for which the demand of the poor seems almost as inelastic as that of the rich.

More important, what meagre knowledge of elasticities that we possess is based on fluctuations in the quantity and price of only one commodity taken at a time. In this case we would expect considerable demand elasticity: if the price of beef rises, more pork will be purchased. But Dr. Waugh's plan of differential pricing is proposed for all basic agricultural products, and for this general category the elasticity of demand must be less than it would be for any portion of it. The elasticity of substitution of food for housing is less than that of beef for pork. The Marshallian (partial equilibrium) demand curves, used by Dr. Waugh, are inappropriate to the larger problems of general equilibrium.<sup>15</sup>

Nevertheless it is probably safe to say that the demand of the poor is somewhat (although not much) more elastic than that of the rich, for basic agricultural products. For subsequent purposes, it is essential to note, however, that it is very improbable that the poor consumers' demand for basic agricultural products in toto has an elasticity greater than unity. Even the partial equilibrium studies would indicate an elasticity of demand of less than unity.<sup>16</sup>

The derived demand for farmers' products (i.e., the demand after subtracting transportation costs and dealers' margin) is then necessarily even more inelastic.<sup>17</sup>

<sup>15</sup> It is for this reason, among others, that we may ignore in this connection Marshall's opinion that the demand of the poor is more elastic than that of the rich. Cf., *Principles of Economics* (8th ed.; London, 1920) pp. 103 ff.

<sup>16</sup> E.g., J. M. Cassels, *A Study of Fluid Milk Prices* (Cambridge, 1937), chap v, viii, ix.

<sup>17</sup> This follows, of course, from the definition of the elasticity of demand,  $\frac{dq}{dp} \frac{p}{q}$ . If dealers' margins are  $m$ , then the elasticity of the derived demand for farmers' products is  $\frac{dq}{dp} \frac{(p-m)}{q}$ , which is less than the consumers' demand elasticity.



We may turn now to the problem of the extent to which poor consumers could be subsidized at the expense of the rich consumers. The answer is determined, not primarily by the relative demand elasticities of rich and poor consumers, but much more by the amounts of these demands, that is, by the location of the demand curves. If rich consumers purchase but a small proportion of the basic agricultural products, it is simply impossible to benefit the poor consumers significantly by a system of differential prices.

Dr. Waugh does not define rich consumers, and the writer is uncertain as to what income is sufficient to make a consumer rich.<sup>18</sup> It seems most conservative to estimate that not more than one-twentieth of any basic agricultural product is consumed by "rich" consumers, if by rich consumers we mean those with an income in excess of \$5,000 per year.<sup>19</sup> Thus, even if the rich have a zero elasticity of demand, a doubling of the prices charged to them would permit only a maximum reduction of five per cent in the price charged of poor consumers (holding total sales revenue constant). Under any reasonable assumptions concerning the definition of the "rich" and their elasticity of demand, a relatively small percentage would be the maximum possible price reduction to poor consumers.<sup>20</sup>

It does not follow that all of this maximum possible price reduction to poor consumers could be used to increase farmers' incomes from a given supply of goods, of course. The

<sup>18</sup> Out of curiosity, this question was posited (in connection with the topic under discussion) to 33 seniors and graduate students in the writer's classes. Their answers ranged from \$1,200 to \$50,000, with a mean value of \$14,897, and a median and mode of \$10,000.

<sup>19</sup> The very inadequate data on income distribution suggest that not more than about two per cent of income receivers secure over \$5,000 per year. Allowance must be made, of course, for their greater expenditures on food (and the domestic servants they support), and numerous other factors, but the writer believes that one-thirtieth to one-fortieth would be more accurate. Cf., A. G. Hart, *Now the National Income Is Divided*, Public Policy Pamphlet No. 23 (Chicago, 1937).

<sup>20</sup> Should people receiving over \$2,000 per year be defined as "rich," perhaps one-third of American families would fall in the category. Then if their elasticity of demand was, let us say,  $-.5$  (which is less than that used by Dr. Waugh in his example), a 50 per cent increase in the price charged of rich people would permit a maximum reduction to the poor on the order of 10 per cent. In general, the lower the income level for defining the rich is placed, the greater will be the possible price reductions to the (smaller) class of poor consumers. But the lower the level is set, the weaker become the two fundamental propositions (*supra*, p. 577) on which Dr. Waugh's whole argument rests. The lower the level is set, moreover, the smaller will be the difference between the demand elasticities of rich and poor consumers.

small portion of the supply no longer purchased by rich consumers under higher differential prices would be sold to poor consumers under the present assumption that the total given supply is marketed. Since the latter's demand elasticity is probably less than unity, the total revenue would be increased only by a relatively small amount corresponding to the difference between the elasticities of poor and rich consumers.

Our conclusion on the demand side is, then, that a system of differential pricing would increase the sales revenue from a given quantity of goods by only a small amount, even under the most favorable assumptions we can reasonably make. It would not be possible either to increase farmers' incomes substantially or to reduce poor consumers' prices substantially, although the latter alternative is the more promising of the two. The relative portion of the (assumed) given supply going to poor consumers could not be increased even as much as the price could be lowered, due to the inelasticity of demand of the rich. The remainder of this section will be devoted to a consideration of cost and supply factors.

### *Supply Factors*

When costs are introduced, the assumption that a given supply is being marketed must be abandoned. In taking this step, we will speak henceforth of the maximization of the net revenue of farmers. For the sake of convenience, we will temporarily follow Dr. Waugh's assumption that the other (marketing) expenses per unit are constant. It is taken for granted that the marginal costs of producing basic agricultural products are increasing functions of output, since we are concerned here only with the short-run problem.

Under these conditions it is highly improbable, under any remotely acceptable assumptions regarding the demand elasticities, that poor consumers will buy more of, or pay less per unit for, a basic agricultural product than they would under competition, if farmers' net incomes are maximized. Figure 1 suggests the line of analysis on which this rather obvious conclusion is based.

In figure 1,  $R$  is the demand curve of rich consumers,  $P$  is the demand curve of poor consumers, and  $T (= R + P)$  is the total market demand curve. Straight line demand curves

have been chosen for simplicity's sake, but such curves have the incidental advantage of increasing in elasticity with increases in price.<sup>21</sup> At the competitive price, the elasticity of R is about  $-.4$  and the elasticity of P is about  $-1$ ,<sup>22</sup>—which certainly exaggerates the relative elasticity of demand of

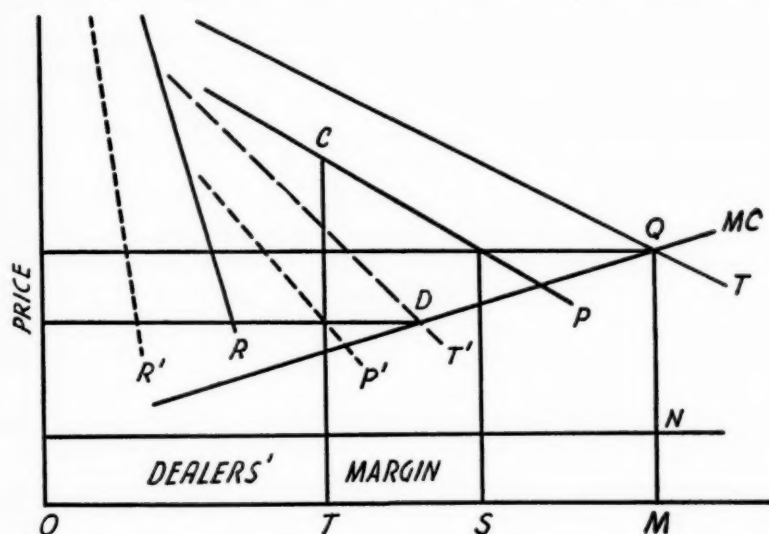


FIG. 1. R —Rich consumers' demand curve  
 R' —Rich consumers' marginal revenue curve  
 P —Poor consumers' demand curve  
 P' —Poor consumers' marginal revenue curve  
 T —Total market demand curve  
 T' —Total market marginal revenue curve  
 MC—Total marginal cost curve

poor consumers. The curves are so drawn that at relevant prices the poor consumers purchase only about twice as much as the rich consumers, which is also unduly favorable to Dr. Waugh's stand. The curves, R', P', and T' ( $=R'+P'$ ), are the respective marginal revenue curves,<sup>23</sup> and MC is the

<sup>21</sup> Dr. Waugh's example cannot be followed, since his demand curve for the rich consumers is inelastic throughout the relevant range, hence marginal revenue is negative.

<sup>22</sup> These are consumers' elasticities. The derived demand for farmers' products, secured by subtracting the "dealers" margin of MN, is about  $-.6$  for P and  $-.3$  for R, at competitive prices.

<sup>23</sup> Based, of course, on the relation,  $P' = P + (P/\eta)$ , where  $\eta$  is the elasticity of demand.

total marginal cost (the sum of dealers' fixed margins, MN, and farmers' marginal costs, NQ).

Under competition the price will be set where marginal cost equals price, or at Q. Price will be MQ and the total sales will be OM, of which OS are to poor consumers. Under discriminating monopoly output will be determined by the point where marginal costs equal total market marginal revenue, or at D. Poor consumers will then purchase a smaller quantity OT, at a higher price, TC.<sup>24</sup> Only if (1) rich consumers are of great importance quantitatively, (2) poor consumers have highly elastic demands, (3) rich consumers have relatively inelastic demands, and (4) the marginal costs of agricultural products increase slowly as outputs expand,—then it is possible that poor consumers will secure a reduction in price by a policy of differential pricing designed to maximize farmers' incomes. The first two assumptions are simply contrary to all our experience.

Dr. Waugh uses an exactly contrary approach. He accepts the possibility of lowering "market charges on the part of the crop allotted to the lower income group," because "there is no reason why all us consumers should get the same marketing services, and if we don't get the same services, there is no reason why the differences in the costs of these services should not be reflected in differences in margins."<sup>25</sup>

This argument is, to the writer, completely unacceptable. Marketing costs to poor consumers may admittedly be reduced either by reducing the services rendered or by reducing the cost of rendering such services. But why a differential pricing system is necessary to secure these economies is not clear. If poor consumers would rather have lower prices and fewer services, they can certainly secure these objectives unless the retail trade is monopolized to an extent not generally recognized.<sup>26</sup> On the other hand, should poor consumers actu-

<sup>24</sup> It may be noted in passing that if the competitive price (MQ) is charged of poor consumers, and the discriminatory price is charged of rich consumers (in the present case it would be over twice the competitive price), then the net revenue of farmers would be increased by only about ten per cent, even under the unrealistically favorable conditions here postulated.

<sup>25</sup> *Op. cit.*, pp. 409-10, 415.

<sup>26</sup> Chain store marketing probably owes a considerable part of its rapid expansion to consumers' desire for more goods and fewer services. Where monopoly is so prevalent and rigid as to prevent fulfillment of consumer desires, however, the remedy, the writer submits, would seem to be a resort to the long-neglected anti-trust laws, not to further cartelization.

ally prefer delivery service and fancy containers to mere calories, the economist must accept this situation as a datum.

Actually the evidence points overwhelmingly in the opposite direction. It seems inconceivable that a discriminatory pricing policy could be administered as cheaply as a competitive pricing policy. The cost of keeping the rich and poor consumer markets separated would be added to the cost of the services rendered. The writer has not even an approximate idea of what the administrative costs of a differential pricing system would be, but certain considerations raised in the next section would suggest that they are heavy indeed.

To recapitulate, once costs are introduced, only under highly improbable conditions could a differential pricing policy "benefit" both the poor consumers and the farmers. If a reasonable allowance is made for the cost of administering the scheme, the probabilities are all in favor of all consumers losing heavily, and the farmers gaining little.<sup>27</sup>

## *II. Certain General Observations on Differential Pricing*

The foregoing remarks bear only on an economic analysis of the possible gains to be secured by differential pricing of basic agricultural products. Since, however, certain economists (including presumably Dr. Waugh) go further and plea for the adoption of such a policy, it is necessary and proper to raise certain broader issues. Rather than postpone the conclusion of this article indefinitely, these issues will be raised in a very general and summary form.

(1) Without any suggestion of cynicism, it must be emphasized that Dr. Waugh's unquestionably benevolent objectives, however debatable their foundations, would find small acceptance from politically articulate groups about to embark on a differential pricing policy for their product. Differential prices would most probably be used to increase the revenue of special producer groups, not to lower prices to poor consumers. The addition of another forlorn consumers representative to a governmental marketing board would not modify practices greatly, if either recent history or common sense is to be trusted.

<sup>27</sup> Restriction of output would doubtless accompany such a scheme in actual practice, and hence upset the conclusion regarding farmers' incomes, but this is a question which is completely outside the scope of the present paper.

(2) Dr. Waugh is content to extend his scheme only to basic agricultural products, and this raises a question allied to the foregoing point. A list of our "basic" agricultural products, for purposes of governmentally controlled differentially pricing policies, would offer certain difficulties of composition even for the impartial academician. The length of the list, however, would be somewhat lengthened before it passed through Congress, if our knowledge of special producer groups (vide tariff history) has any validity. "Basic" products, the writer submits, would eventually include watermelons as well as wheat.

(3) The administration of the suggested differential pricing policy for homogeneous and transferable products seems utterly hopeless in a democracy.<sup>28</sup> The writer would personally appreciate an explanation of how the corner grocery would be able to charge different prices for the identical loaf of bread from Mrs. Jones and Mrs. Smith (whose husband earns \$1,000 less than Mr. Jones), especially if Mrs. Jones and Mrs. Smith were friends. The alternatives seem to be dictatorial control over consumers or systematic and skillful deception.<sup>29</sup>

(4) The proposal that certain products be subsidized for the poor consumer, because they are good for him, seems a bit out of place for an economist per se. It is just possible that on equally valid grounds some people may prefer beer and others pork chops. In a democracy, if such a utopian

<sup>28</sup> Geographical price differentials, which are much the easiest form of price discrimination to administer, are out of the question in the present case, since there is no general geographical separation of income groups outside of a few metropolitan regions. Even in these exceptional cases, the most one can do is to isolate tenement sections (which do not contain all poor consumers and do contain some "rich" consumers, under any significant definition of these terms). The New York and Boston experiments with low price milk to poor consumers, will therefore, give little information concerning the administrative problems involved in a thorough-going separation of rich and poor consumers. Such case, moreover, involve the delicate problem of whether the poor consumer gets the same commodity (e.g., when he must walk a mile to get his milk). The administrative difficulties of any form of price discrimination, moreover, will manifestly increase with the price spread between markets, and this offers a genuinely important limitation of the possibilities of securing large gains even when cost and demand conditions are otherwise favorable.

<sup>29</sup> I agree with Dr. Waugh (*op. cit.*, p. 414) that "discrimination of the first degree" (in Pigou's terminology) is utterly impracticable. Such discrimination involves the marketing to the rich by units, and securing the maximum amount for each unit. On Mondays, presumably, bread would be \$10 a loaf, on Tuesdays, \$8, etc.,—at least the first week! Cf., Pigou, *Economics of Welfare* (4th ed.; London, 1932), pp. 275 ff.; J. Robinson, *Economics of Imperfect Competition* (London, 1932) p. 187 n.



construction may be permitted, it is fundamental that desirable changes in consumers' tastes (desirable, that is, in the light, say of medical knowledge) be effected by education, not by manipulation of relative prices. The obstacle raised by insufficient income is better overcome by appropriate taxation and social service expenditure policies.<sup>30</sup>

(5) We may note, finally, although this point might have been discussed under price theory, that the administrators of differential prices would at best possess only sophisticated guesses regarding the demand curves of rich and poor consumers. It is not surprising that such demand curves have never been derived statistically; as a matter of fact, they could not be derived until the plan of differential pricing had been in effect for some time. Competent statistical economists will (and must) admit that even the total market statistical demand curves are still in an embryonic stage. There is considerable reason for believing this will continue to be true for some time to come. The corollary of such considerations is that, granting everything else, only by sheer luck could those differential prices be established (and changed from time to time) in a way that would maximize farmers' incomes or reduce as far as possible the prices charged of poor consumers.

The observations in this section, to repeat, are directed not so much at Dr. Waugh's theoretical analysis, but rather at the inference that acceptable theoretical conclusions, based on restrictive assumptions, are a sufficient basis for economic policy.

### *III. Summary*

It may be well to collect at this point the numerous threads of argument presented in the foregoing paper, with a view of bringing into perspective the major objections to the system of differential pricing of basic agricultural products advanced by Dr. Waugh.

(1) It is impossible to seek escape from value judgments in questions of social policy, by appealing to the hedonistic calculus in terms of utilities and satisfactions. Modern economics has definitely accepted the fact that cardinal measures of utility cannot be secured empirically, and the comparison

<sup>30</sup> The first of these policies, the instituting of a truly progressive tax system, might be enough as far as food products are concerned, in view of the present regressivity of federal and state taxation.

of utilities of different individuals can only be self-deception.

(2) It follows that Dr. Waugh's proposal is ultimately based on two of his judgments: (i) Farmers deserve dollars more than rich consumers do; and (ii) farmers deserve dollars just as much as poor consumers do. These are fundamental bases of his proposal.

(3) Waiving these objections, the suggested differential pricing policy will lead to reductions in prices to poor consumers, and at the same time increase farmers' incomes, only (i) if the elasticity of demand of poor consumers for all basic agricultural products taken together (which eliminates most substitution) is considerably greater than that of the rich, which is not evident *a priori* and is certainly undemonstrable, and if the poor consumers' elasticity is greater than (minus) unity, which is improbable; (ii) if the rich consumers, a class difficult to define, consume a significant portion of the total supply of the commodities in question, which is almost certainly untrue under any acceptable definition of "rich" consumers.

(4) Once costs of production are introduced, the case is overwhelmingly against the possibility of significantly increasing farmers' income at the same time that lower prices are given to poor consumers. Only under improbable conditions would poor consumers pay as low a price under discriminating monopoly as under competition. If the costs of administering the system (i.e., separating the markets of poor and rich consumers) are considerable, it seems that no one would gain from the plan.

(5) Finally, there is no reason to believe that consumers would really be considered in such a program, that the list of basic commodities would measure anything but political strength, or that the efficient administration of the scheme would be even conceptually possible.

Numerous broader questions could have been raised. The plan of differential pricing has certain grave implications for output restriction, and for utilization of resources in general. But even within the scope of discussion pursued here, it is clear that the proposal of discriminatory marketing of agricultural products must be rejected.

## REJOINDER

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**I** FIND in Professor Stigler's able paper many things with which I agree wholeheartedly but also many things which seem to me incorrect and others which show a definite lack of understanding of my paper. I shall limit this rejoinder to an attempt to clarify what seem to me to be the main issues.

1. I agree with Professor Stigler's argument that it is technically impossible to prove by utility theory (or by any other procedure) whether a given proposal will promote or hinder public welfare. Therefore, neither he nor I has a right to say with any finality that a scheme like the one I discussed is "good" or "bad." Perhaps we have both gone further in this respect than we should. My brief discussion of utility analysis was intended to show that it could not be used to prove that differentiated prices necessarily led to anti-social results. I suppose Professor Stigler would have to agree with this. In the final analysis a scheme of this kind is good only if most of us think it is good. I believe that the results of a carefully planned program along the lines I suggested would be generally accepted as good both by farmers and by the consuming public.

2. In his former paper in the August, 1937, issue of this JOURNAL and again in his present paper Professor Stigler insists on discussing this plan as if it were intended to maximize the net income of farmers by restricting production to the point where marginal returns just cover marginal costs. This is a complete misunderstanding of the proposal and it is almost entirely because of this misunderstanding that Professor Stigler reaches the conclusion that the plan "must be rejected." I, too, would reject the plan Professor Stigler discussed in his section headed "Supply Factors," but I disown it, and insist it is entirely different from the one I discussed.

3. The only section of Professor Stigler's paper which discusses a plan even remotely like my proposal is that headed "Demand Factors." In that section he agrees that a certain kind of differentiated prices would raise farmers' incomes and would give poor families the benefit of lower food prices.

However, he believes these benefits would be slight, whereas, I believe they might be substantial. Since neither of us is able to produce good statistical evidence on the elasticity of demand of different income groups we both should keep open minds on this point, but it is important that we understand each other's reasoning. I believe Professor Stigler's conclusions on this matter result mainly from another misunderstanding as to the nature of the plan I proposed. This is my next point.

4. Professor Stigler seems to think that only "rich" families would pay the regular market price and that all other families would be granted the lower prices. My paper indicated that the regular market prices would be paid by all families with medium and high incomes and that the lower prices would be granted only to families with low incomes. I did not even use the terms "rich" and "poor" as Professor Stigler does. I deliberately avoided an exact definition of the dividing line between income groups because I believe this requires careful study and practical experience. To decide such a problem by asking students in an economics class what level of income makes a family rich seems to me to be ridiculous. I certainly would have in mind a dividing line much lower than the ones Professor Stigler assumes. The situation illustrated in his diagram, which he says "is also unduly favorable to Dr. Waugh's stand" represents a situation too unfavorable to be considered, even if he had used it to test my proposal instead of using it, as he did, to test the results of a scheme to maximize farmers' incomes by restricting production to the point where greatest monopoly profits were obtained.

5. I see nothing in Professor Stigler's paper which casts any doubt on my main conclusions, including the following: "If prorates like those in Diagrams 3 and 4 can be worked out and administered in a practicable way, they appear to have greater possibilities of raising farmers' incomes and to be more desirable from the consumer's standpoint than a flat reduction in output"; and "I believe some thought might well be given to a program of multiple prorates and graduated prices for some of the basic foods as a permanent policy entirely aside from the needs for farm relief."

6. In spite of the above remarks I agree with many of Professor Stigler's points, and would like to mention two which I believe are very important. First, there are obviously some difficult administrative problems to be met. This was admitted in my paper but was not developed because it would require a long paper in itself. I shall simply restate my opinion that there are practical possibilities of carrying out such a program. Second, I agree that there would be danger that strong minority groups might be able to distort and misuse such a plan for their own selfish benefit. In my opinion this is the greatest difficulty with the proposal, or with almost any other proposal for improving economic conditions. The last sentence in my paper indicates that I had this difficulty in mind but Professor Stigler is right in emphasizing it.

7. Finally, may I say that I hope the JOURNAL will publish debates on other public issues in the field of marketing. It is good for all of us to state our views on problems like this and to have our views criticized fully and frankly.

## TRADE AND TRADE AGREEMENTS BETWEEN CANADA, THE UNITED STATES AND GREAT BRITAIN

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**E**VER since the United States Reciprocal Trade Agreements program was inaugurated it has been recognized increasingly that until and unless a really significant agreement can be arranged between the United States and the United Kingdom it would be impossible to complete worthwhile agreements with several other countries and to secure anything like the degree of economic advantage contemplated by those responsible for the program. No particular surprise was evidenced, therefore, when it became known in the early part of 1937 that representatives of the United States government were sounding out officials of the United Kingdom regarding the possibilities of a trade agreement between the two countries. The real occasion for interest and surprise was the public announcement in November last to the effect that the preliminary steps in arranging such an agreement had already been taken. The significance of this announcement was increased greatly by the further and almost simultaneous one that a new agreement between Canada and the United States was in contemplation. Since that time negotiations between officials of the three countries concerned regarding the specific terms of these two agreements have been proceeding steadily and it is now generally assumed that the details will be completed and the agreements signed in the relatively near future. Furthermore, it seems highly probable that the completion of these two agreements will be followed by several others involving the United States, the United Kingdom, several British Empire countries other than Canada, and democratic European countries such as Denmark, Norway, Sweden, Holland, Belgium and France. The completion of an Anglo-American Agreement would appear to render such further agreements either necessary or possible.

While awaiting completion of the above-mentioned United States-Canadian and Anglo-American agreements it may be



opportune to take note of what they are likely to signify in the way of changes in international trading policies. In addition it may be desirable to consider these proposed agreements in the light of the existing United States-Canadian and British-Canadian agreements as well as the existing economic activity in the three countries.

We may begin by recalling the fundamental reasons for and the comparatively recent emergence of the British protective policy. From 1918 Britain experienced a pronounced and gradually increasing fall in industrial exports. This drop in exports was accompanied by rapid increases in her imports of agricultural commodities according as the so-called agricultural importing countries of Europe adopted self-sufficiency programs. Falling exports along with rising imports meant steadily occurring and rapidly mounting adverse trade balances throughout the decade of the twenties. In view of these circumstances the extremely limited use of protective tariffs prior to 1930 indicates strong reluctance to forsake free trade principles. Not until she became a dumping ground for bonused exports and until other countries had placed insuperable obstacles against her own exports did Britain institute a really comprehensive protective program. Important steps in its implementation were the passage of The Abnormal Importations Act in November 1931, The Importation Duties Act in March 1932 and finally The Ottawa Agreements Act in November 1932. In all of these acts the British preferential principle was adopted.<sup>1</sup>

At the Ottawa Conference the British representatives tried to call a halt to the growth of protection by suggesting that the Empire countries should secure preferences in their several markets by lowering the duties which then existed between themselves rather than by raising the duties against foreign countries. In general this was a suggestion that Empire agricultural producers should be helped by lowering the duties on industrial products rather than by having Britain place tariffs against foreign agricultural goods and thereby giving them a preferred position in the British market; in other

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<sup>1</sup> For a good account of the development of this program see article entitled "British Imperial Preferences—Its Relation to United States Farm Products" in *Foreign Agriculture*, August 1937.

words that the Empire industrialists rather than the British consumers should come to the aid of Empire agriculturists. At that time, however, the insistent desire to maintain the high level of industrial protection prevented the suggestion from being acted upon. The trend was still in the direction of more rather than less protection.

So far as the countries under consideration are concerned this trend was not reversed until the United States-Canadian agreement of November 1935 was arranged. While that agreement represented mutual concessions by Canada and the United States those concessions were limited by the natural opposition of protected groups, by the various agricultural price-raising programs in the United States, by the terms of the Reciprocal Trade Agreement Act which forbade duty reductions of more than 50 per cent, by the necessity of confining concessions to commodities the importations of which were supplied mainly by the other country, and by the fact that they could apply only to commodities which did not enjoy an Empire preference in the Canadian market by virtue of the Ottawa Agreements. A further step in the direction of downward tariff revision was taken when the agreement between Canada and the United Kingdom was renewed and revised in February 1937. The significant feature of that agreement was the approval by the Canadian government of the idea of securing preferential advantages by means of lowering the rates of duty then levied by Canada and Great Britain on each others products. That agreement saw over one hundred additions to the list of British commodities which are entitled to enter Canada free. In addition significant duty reductions were made in respect of some British goods including certain textiles which form an important part of Canadian importations. Positive reductions by Great Britain were confined to motor vehicles and their component parts, silk stocking and reed organs.

Quite apart from their value in facilitating trade between Canada and the United Kingdom these duty reductions are of distinct importance for the reason that they constitute a paving of the way to concessions on a wider plain in the United States-Canadian agreement now being negotiated. It will now be possible for Canada, if she so desires, to make

corresponding reductions on any goods of similar category which are produced in the United States.

The forthcoming United States-Canadian and Anglo-American agreements may be regarded as the most important contributions to the cause of freer trade relations. This is particularly true of the Anglo-American agreement. That agreement is important for several reasons.

In the first place the two countries involved are the largest international traders in the world. In the second place, it represents the first definite departure by Great Britain from her recently-developed policy of high protection and gives ground for expectation that similar moves will characterize her future dealings with other countries notably the democratic European countries which have recently decided that in the absence of British cooperation agreements among themselves would yield only insignificant results. To this extent at least it would seem to indicate an attempt to return at least partially to the pre-depression trading conditions. Obviously such a reversal in British policy is contingent upon the prospect of lower United States duties on British goods. Again, since any worthwhile Anglo-American agreement seems likely to involve concessions on important American exports such as hog products, fruits, wheat, tobacco and lumber it presupposes some British preferential losses on the part of Canada. Where Canadian goods enter the British market duty free the rate of preference which they enjoy over similar American goods is measured by the tariff on the American goods. In such cases any British concessions to America will mean corresponding losses of preference to Canada. On the other hand, as already indicated, where Canadian goods are subject to duty on entering the British market, British concessions on American goods need not involve loss of preference on the part of Canada. In order that concessions to America may remain consistent with retention of Canadian preference it is only necessary that corresponding concessions be given to Canada. However, since the Anglo-American Agreement is likely to involve some loss of Canadian preferences and since such losses cannot be inflicted without Canadian consent it may be presumed that the agreements now pending will provide for some Canadian compensation.

Whether this will take the form of further British concessions on Canadian industrial goods or American concessions on Canadian agricultural commodities and raw materials remains to be seen. The fact that Britain made so few concessions to Canada in the 1937 agreement may suggest the former.

A final significant feature of an Anglo-American Agreement is the difficulty of arranging it so as to permit the granting of most-favored-nation treatment on the part of Great Britain. This difficulty arises from the fact that several of the commodities on which the United States is certain to want concessions are imported by Britain in large quantities from a number of other foreign as well as Empire countries. This is especially true of hog products, wheat and lumber and to a lesser extent of certain fruits. In dealing with this situation any one of three lines of action is conceivable. One plan would involve restricting British concessions to goods of which the United States is by far the largest supplier and thus greatly narrowing the scope of the agreement. A second course would be for Britain to extend concessions on goods of which countries other than the United States are important suppliers but to discriminate against these other countries by refraining from granting them most-favored-nation treatment. As a third possibility Britain might grant concessions on the wider list of products and agree to extend most-favored-nation treatment if and when satisfactory compensations are offered.

We may turn now from these general implications of the Trade Agreement program to consideration of certain facts which tend to condition the character, extent and direction of flow of trade between Canada, the United States and Great Britain and which cannot but influence the nature and effectiveness of any trade agreements arranged between these countries. In order to illustrate the importance of these facts considerable reference will be made to existing or prospective agreements.

One of such facts is that Canada is at a far earlier stage of economic development than the United States. This means that despite high production per capita she has a much smaller production of many commodities and a much smaller

consuming population than her neighbor. Because the scale of production and size of market is so different in the two countries it follows that equal tariff concessions between them are certain to produce very unequal effects. An example will make the point clear. The existing United States-Canadian agreement reduced by one cent per pound the duty on Canadian cattle weighing over 700 pounds so long as the number entering the United States did not exceed 155,799 head. Since Canada's cattle population is about one-eighth and her human population about one-twelfth that of the United States<sup>2</sup> it can easily be seen that the transference of 155,000 cattle from Canada to the United States would cause the price to rise much more in the Canadian market than it would fall in the American market. While this number of cattle would satisfy a very considerable part of the total Canadian demand, it is an extremely small fraction (about .75 of 1 per cent) of the annual killings in the United States. If, on the other hand, we assume these cattle to be moving in the opposite direction it can be seen that their transference would depress the Canadian price far more than it would raise that in the United States. Since, after all, trade concessions are opposed on the ground that they will cause price declines, the significance for trade bargaining becomes clear. What it really means is that the United States can afford to offer far larger concessions than Canada on products that are likely to move in either direction. It means also that the United States can allow fairly free entry to any commodity such as beef cattle or potatoes or cheese which ordinarily moves only in the southern direction without suffering any serious price-depressing effects. This is especially true if the products are ones whose consumption tends to vary directly with the size of the population or if for any reason whatever they are subject to an inelastic demand. The list of commodities in this category is quite lengthy and includes several of those in the agricultural group.

A second fact is that both Canada and the United States are ordinarily on a net export basis in respect to several important commodities including bacon, wheat, certain fruits,

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<sup>2</sup> Compare statistics in Canada and United States Year Books.

tobacco and lumber. This is true despite the greater economic maturity of the United States. Since each country has more of these commodities than it can sell at home at a price higher than the world price it is only natural to expect that trade between the two countries will be at a minimum so far as such goods are concerned. When trading does take place it is likely to be for one of three reasons. It may happen where a commodity is produced only in certain regions of the country and is wanted for consumption in other regions. In such cases it is often cheaper to bring it from adjacent sections of the neighboring country than to pay the cost of long transportation hauls from one section of a country to another. Again it may happen where the commodity is relatively perishable, is consumed regularly but is produced at different seasons in the two countries. This is the case with certain fruits and vegetables. Finally, it may occur where a product of the one country is sufficiently differentiated from that of the other. A case in point is that of Canadian hard spring wheat which is sufficiently different from United States wheat to cause it to be in demand for mixing purposes across the border. International trade which takes place between the two countries for any of these three reasons would seem to be following natural channels. If so, it should surely be encouraged wherever possible by the removal of artificial trading obstacles. If allowance is made for the special circumstances just indicated it will remain true that international trade between Canada and the United States in respect of commodities which both produce in net surplus amounts will not take place. This will be so for the very good reason that such products will tend to sell at the same price in both countries. Where this situation prevails no increase of tariff can raise the price and no amount of tariff reduction can lower it.

Another fact, somewhat different but related to the foregoing, is that the United States alternates between the export and import basis in respect to certain commodities which Canada always exports in considerable amounts. This situation applies to such things as beef cattle and cheese. The general effect of this condition is that Canada can have no assurance of an American market even though the American tariff were removed entirely. From the Canadian standpoint



the most unsatisfactory feature about the United States market for such products is its unreliability. Considered from this standpoint the United Kingdom market has much to commend it. Canadians can at least know that Great Britain will always have to import beef and cheese and in large quantities at that. On the other hand the United States is not likely to be off the import basis permanently or for long periods in respect to these products. This suggests that the tariff on them might well be kept at a low level. The lower it is the more often will Canadians get some advantage from the American outlet. At the same time the United States is so near to the export basis at all times that imports would receive an early check even though the tariff were non-existent. A small amount of imports will be sufficient to lower the price to the Canadian level and thus to remove the inducement to further imports. This truth that it is not always the existence or the height of a tariff wall that determines whether trading will take place is well illustrated by the recent history of cattle movements from Canada to the United States. It is well known that many more Canadian cattle entered the United States in each of the two years since the United States-Canadian agreement went into effect than in any year immediately preceding 1936. It is realized also that the duty reduction of one cent per pound was partly responsible for this increased entry. The factor mainly responsible, however, was the abnormally low supply of cattle on feed in the United States during these periods. This is indicated by the fact that shipments had shown a marked increase for several months prior to the coming into effect of the trade agreement.<sup>3</sup> It is also shown by the fact that, despite the agreement, shipments have fallen markedly during 1938,<sup>4</sup> by which time the number of cattle on feed in the United States had increased considerably.<sup>5</sup> Further confirmation that supply and price conditions as well as tariff rates are important in determining trading volume, can be found

<sup>3</sup> For statistics of U. S. cattle imports see 1936 United States Tariff Commission publication entitled "Concessions Granted by the U. S. in the Trade Agreement with Canada," pp. 132 and 133.

<sup>4</sup> For comparison with 1936 and 1937 exports see *Livestock and Meat Trade Review*, published monthly by Dept. of Agriculture, Ottawa.

<sup>5</sup> *Crops and Markets*, January 1938. U.S.D.A.

by examining the figures showing Canadian exports of cheese to the United States since 1900. During that period the annual amount of these exports has varied from almost zero to over fourteen million pounds.<sup>6</sup> Furthermore, the variations often have occurred suddenly and without any corresponding direct variation in tariff barriers. Incidentally the relatively low per capita consumption of cheese in the United States as compared with Great Britain is very important in determining the extent of Canadian exports to the two countries.

A fourth fact is that if the United States duty on a Canadian product happens to be much higher than is necessary to keep out imports it can be lowered very considerably without resulting in any increase in trade. This is clearly illustrated in the case of cream. Despite a reduction in duty from 56 to 35 cents a gallon in the United States-Canadian agreement shipments of cream from Canada have remained inconsequential. This suggests that if the United States is still willing to admit one and one-half million gallons of Canadian cream the duty might well be lowered from the present level. At the same time, it might be argued that such further reduction is impossible since United States dairy prices have risen relative to Canadian since the present agreement was made. However, perhaps it may be doubted whether the current practice of purchasing from producers on a governmentally supervised quota basis would permit in any event much shipment of Canadian cream. The same statement would apply even more fully in the case of whole milk.

The next point to be considered is that in the case of some of the most important articles traded in by all three countries it is virtually impossible to shift from one market outlet or one source of supply to another no matter what the trading terms may be. This is so because a commodity is produced in only one of the three countries or because only one of them is unable or unwilling to produce its own supply or because the article is so bulky in relation to value that it is clearly uneconomical to transport it further than necessary. A few illustrations will clarify this matter. It seems clear, for example, that since both Canada and the United States pro-

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<sup>6</sup> Statistical sheet No. 9, Dairy and Cold Storage Branch, Dept. of Agriculture, Ottawa.

duce large net surpluses of wheat, bacon, apples and tobacco, they cannot hope to exchange much of these things between themselves but must look upon Great Britain as the real export outlet. In the same way Canadian newsprint, whiskey, potatoes and hay must go mainly to the United States or not at all. For like reasons Canada must secure her imports of raw cotton and petroleum from the United States rather than from Great Britain. Likewise, whatever woolen textiles she imports must come from Great Britain rather than the States. Again, no one has seriously suggested that the consumers of central Canada should substitute British coal for the Pennsylvania product on any extensive scale or that Britain should send more of her whiskey to Canada rather than to the United States. The important thing about all these cases and any others where the export outlets and sources of supply are fairly obvious is that there exists comparatively little opportunity for diverting trade through the medium of trade agreements. Trading lines have become and are likely to remain definitely established because they are based on such fundamental conditions as differences in natural resources, differences in stages of economic development and differences in transportation costs.

The next thing to notice is that since both Canada and the United States are large surplus producers of wheat, bacon, apples, tobacco, lumber and other products, the success of either country will depend considerably on the terms on which it has to compete with the other for the British market. That is why Canada was so anxious to secure preferred entry on these products in 1932 and again in 1937 and why the United States will be anxious to secure at least part of these special advantages under the terms of the forthcoming Anglo-American Agreement. While one can only predict the outcome of the present negotiations it may not be out of place here to offer a few comments regarding the British preferences indicating something of their benefit to Canada and the possible effects of their curtailment.

While there is general agreement that the British preferences have been of real value in expanding the proportion of Canada's exports which has gone to Great Britain since 1932 it is recognized also that this expansion was well under way

prior to the consummation of the Ottawa Agreements and that several factors other than the preferences contributed greatly toward it. Such factors included the tendency of non-British countries to increase trade barriers, the special demand for Canadian goods due to Britain's pronounced internal recovery, the special suitability of Canadian goods for British consumption, favorable exchange rates, and the general increase in world trade and world prices during the period in question. This is but to say that the preferences are especially valuable when operating along with or under special conditions. Should such conditions tend to disappear it might easily happen that the future value of the preferences would be greatly reduced and therefore that any loss of them would not be so serious as might now appear. But whatever their present or future value to Canada may be the significant point at the moment is that Canada may shortly have to face a situation wherein part of these advantages are shared by the United States. How may this affect Canada? In attempting an answer we may consider a few of the more important commodities one at a time.

As far as wheat is concerned it is doubtful whether the British preference of six cents per bushel ever was or can be of any real significance. Subsidized exports, mixing regulations and the use of exchange controls have gone far toward offsetting the duty. Moreover, Great Britain cannot take all of Canada's wheat in any event which means that the part excluded from that market must face added competition elsewhere from non-empire wheat prevented from entering Britain because of the duty. The easier entry to the British market may be offset by a more difficult entry to other markets. In addition the Ottawa Agreements require Canada to sell her wheat at the world price. The real preference which Canadian wheat enjoys over American is a natural preference, namely the fact that its superior hardness is in special demand by British millers for mixing purposes. This natural preference will remain even though the legal preference is removed.

In the case of bacon, Canada's preference takes the form of a very large quota. It is so large that Canada has not yet been able to use more than 70 per cent of it. The bacon

which she is entitled to supply but does not is being supplied by other countries including possibly the United States. This means that 30 per cent of the Canadian quota could be given to the United States without Canada being any worse off than at present. The damage would really be done to those other countries, other than the United States, now filling the gap which she has left open. Moreover, Canada is protected against United States competition in that her bacon, like her wheat, is quite different in type from the United States product. Canada is really catering to a different section of the British market and therefore is not likely to suffer from direct competition from the United States. The situation would be entirely different, however, were any British concessions to the United States extended to other countries such as Denmark. The mere use of the quota method of regulating imports as well as the desire to protect British pig raisers will render any such possibility both unnecessary and unlikely.

In respect to lumber it is probably true to say that Canada has always regarded the existing preference of more value in checking Russian exports than those of the United States. That such is the case is certainly indicated by the argument used at the time of the Ottawa Conference. Granting the value of the preference, however, and assuming that part of it is removed, there are still one or two ways in which the injury to Canada may be minimized. While the terms limiting duty concessions to 50 per cent of the rate in force prior to the 1935 United States-Canadian Agreement may prevent further reductions from the present rate of fifty cents per thousand feet, they do not prohibit enlarging the quota on which this rate applies. It is to be noted that in pre-depression days Canadian lumber exports to the United States exceeded considerably the present quota of 250,000,000 board feet.<sup>7</sup> In the second place the recent action of the Canadian government in removing the 8 per cent sales tax on lumber sold in Canada and in undertaking to supply on a large scale cheap long-term loans for home building purposes<sup>8</sup> may provide a considerable Canadian market to replace any that may be lost in England. Incidentally, it would appear that

<sup>7</sup> See Canada Year Books, 1930 or earlier years.

<sup>8</sup> The Federal budget of 1938 made provisions to this effect.

the large building boom under way in England since 1932 has about subsided and therefore that the British demand for lumber is likely to drop substantially from that of recent years.

Quite a different situation would appear to exist regarding apples. There the loss in preference might be serious to Canada. In recent years she has been exporting around 50 per cent of her commercial apple production and almost all of this went to the United Kingdom.<sup>9</sup> It is noteworthy also that per capita consumption of apples in Canada has declined from 39 to around 28 pounds since 1924.<sup>10</sup> On the other hand there may be some fall in production within the next few years owing to the decline in plantings which continued from 1925 to 1934 but which has not yet been reflected in production.<sup>11</sup> This influence will be offset later, however, because of the steady increase in planting since 1934.<sup>12</sup> Probably the chief hope is an increased Canadian consumption, particularly in the Prairie Provinces, because of general improvement in conditions there.

In the case of tobacco we have a more or less unique situation (as far as agricultural products are concerned) in that both Canada and the United States have been charged a high duty on entering Britain for many years. This means that there is abundant room for giving important concessions to the United States without making any reduction in the fifty cent per pound Canadian preference which has existed since 1925. All that is necessary is that the duties on both countries' products be reduced an equal amount. Furthermore, from the United States standpoint, it is far more important to have the rate of duty reduced than to have the Canadian preference eliminated. Canadian exports are a very small fraction of American exports and consequently cannot seriously replace the latter on the British market. However, should the only concession given the United States be the sacrifice of the Canadian preference Canada's position

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<sup>9</sup> The Apple Crop, Production and Distribution, 1937, Dominion Department of Agriculture, Ottawa.

<sup>10</sup> See JOURNAL OF FARM ECONOMICS, May 1936, p. 417.

<sup>11</sup> The Agricultural Situation and Outlook 1938, p. 58. Department of Agriculture, Ottawa.

<sup>12</sup> *Ibid.*



might not be greatly worsened. Relief might be found in a continued expansion of British tobacco consumption. That consumption increased from 149,000,000 pounds in 1933 to 174,000,000 pounds in 1936.<sup>13</sup>

Speaking generally, it may be said that Canada, if faced with any loss in her British market preferences, must keep in mind three main possibilities. She must try to estimate what her losses will be directly. She must try to arrange things so that any such losses will be at least compensated for by concessions made by either Great Britain or the United States or both. Finally, she must consider how much she may stand to gain from the general increase in world trade and from the new prosperity of Britain and the States which may result from the Anglo-American Agreement. Moreover, both she and Britain must remember that she has to meet large annual payments of principal and interest on British account.

There remain two further factual items which seem worthy of mention and brief comment. The first is that the main benefit to agricultural producers in Canada and the United States of a trade agreement between the two countries must come indirectly from the concessions made on goods of a non-agricultural character. This is so, for the simple reason that such goods are the ones most traded in. American farmers must hope to derive part of the benefits that come from cheaper raw materials for manufacture and more fully employed industrial and agricultural workers. Canadian farmers as a class must expect their improvement to come partly from fuller employment and larger purchasing power of Canadian industrial and commercial workers and partly from lower costs of the goods which they need for production and personal consumption. In this connection it may be remarked that the current disinclination of agricultural groups in either country to grant trade concessions is not so much a sign that they are in favor of price raising through tariffs as it is of their feeling that the general price structure is out of joint. Their opposition is probably not so much to agriculturists of another country as it is to non-agriculturists wherever they are.

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<sup>13</sup> *Ibid.*, p. 73.

This leads to the final fact which is that many farmers are reluctant to sacrifice any advantage which duties on agricultural products may give them because they are doubtful whether reduction of the industrial tariffs will really or necessarily result in lower prices of industrial goods. There is a feeling that in many cases where goods are produced and sold under imperfectly competitive conditions, selling prices will be stabilized at their present level even though the firms concerned may obtain lower costs because tariffs have been removed on their raw materials. This feeling is probably fairly justified. It may be true also that where Canadian industries are financially controlled by the same industries across the border, arrangements will be made whereby the goods produced in one country will not be offered for sale in the other. In such an event there would be no need to drop the price in Canada even though the tariff on the article had been reduced.

## SOME TECHNOLOGICAL CHANGES IN THE HIGH PLAINS COTTON AREA OF TEXAS

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THE rapid shift from horse power to tractor power and increases in the size of power units is seen in recent farm management studies made in the High Plains cotton area of western Texas.<sup>1</sup> This area is fairly typical of the newer sections of the cotton belt in Texas and Oklahoma. Usually from these areas comes from 15 to 20 per cent of the Nation's cotton crop, and within them is located a large acreage of potential crop land suited to cotton production. The changes herein described are taking place quite generally over the State, but more especially in the High and Low Plains, the Corpus Christi Area, the Coast Prairie, and the Black Prairie.

The High Plains cotton area has been developed from ranch lands during the past 25 years, with most of the development occurring during the decade following 1920, when almost three-fourths of the present cultivated area was brought under plow. Most of the settlers came from cotton-producing counties in north-central Texas, bringing one-row horse-drawn equipment with them. A study of the cost of producing cotton on 54 farms, selected at random in the area, revealed that as late as 1923 one-row equipment only was being used on these farms.

Tractors available previous to 1925 were designed primarily for belt work and for flat breaking, discing, and harrowing, a set of operations not generally practiced in the area. Hence, they were useful on individual farms only during that short period of time when the sod was being broken. Usually this work was done on a custom basis by means of the large road type tractor. By 1925 a tractor especially designed to plant and cultivate row crops was developed.<sup>2</sup> The new tractors

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<sup>1</sup> Texas Agricultural Experiment Station and Bureau of Agricultural Economics, U.S.D.A. cooperating.

<sup>2</sup> Much of the field testing of this all-purpose tractor had been done in Texas in the Corpus Christi cotton area and in the southern portion of the Low Plains near San Angelo. It naturally followed that the first shipments in quantity went to Texas farmers in these two areas.

TABLE 1. CHANGES IN SIZE OF EQUIPMENT AND POWER UNITS MARCH 1, 1931 TO MARCH 1, 1937, AND ACREAGE OF CROP LAND ON FARMS USING EACH SIZE OF EQUIPMENT IN 1936

Item	Year							Crop land per farm during 1936 (Acres)
	Year							
	1931	1932	1933	1934	1935	1936	1937	
Total number of farms	141	138	127	139	138	126	126	
Farms using one-row horse-drawn equipment	9	7	7	5	5	7	4	98
Farms using one-row and two-row horse-drawn equipment	35	83	24	16	12	5	5	145
Farms using one set of two-row horse-drawn equipment	40	36	45	60	42	32	16	182
Farms using two-row plus one-row horse-drawn equipment	17	27	21	16	11	5	2	245
Farms using two sets of two-row horse-drawn equipment	4	5	4	8	4	2	0	380
Farms using two-row tractor-drawn equipment (one tractor)	20	19	12	18	46	52	74	233
Farms using two-row tractor and one-row horse-drawn equipment	6	6	7	7	3	4	4	310
Farms using two-row tractor and one set of two-row horse-drawn equipment	9	3	5	5	7	7	4	408
Farms using two-row tractor and two sets of two-row horse-drawn equipment	1	1	1	0	0	2	1	600
Farms using two-row tractor-drawn equipment (more than one tractor)	0	0	0	0	0	1	2	418
Farms using three-four-row tractor-drawn equipment	0	0	0	3	5	7	12	408
Farms using three-four-row tractor and one-row horse-drawn equipment	0	0	0	1	2	2	2	387
Farms using three-four-row tractor and two-row horse-drawn equipment	0	0	0	0	1	0	0	—
Percentage of farms using two-row equipment for bulk of field work	68.8	69.5	75.5	82.0	82.0	83.3	84.1	
Percentage of farms using only two-row or larger equipment	52.5	47.1	53.5	67.6	76.1	81.0	86.5	
Percentage of farms having tractors	25.5	21.7	20.5	24.5	46.4	59.5	78.6	
Percentage number of workstock per farm	6.2	6.2	6.4	5.9	4.6	3.5	2.7	

proved to be particularly well adapted to the needs of cotton producers, and a number of them were employed in the High Plains cotton area in 1926. Almost simultaneously with the introduction of the all-purpose type of tractor came the use of two-row horse-drawn lister-planters and cultivators and of the cotton sled or stripper in harvesting cotton. Thus 1926 marks the approximate date of the introduction of large-scale methods of cotton production in the High Plains cotton area.

#### *The Situation in 1931*

Five years later farmers of this area were well on their way in the shift from one-row equipment to multi-row equipment. A study of 141 farms representative<sup>3</sup> of the five main cotton-producing counties of the area (See table 1) reveals the fact that in 1931 only nine of these farms depended entirely upon and had but one set of one-row equipment, while 35 others used one-row horse-drawn equipment supplemented by some two-row equipment, usually a cultivator. Sixty-one farms were using at least one complete set of two-row horse-drawn equipment, although 17 of these used some one-row equipment in addition. Of the remaining 36 farms, 20 used only two-row tractor-drawn equipment, while 16 farms supplemented two-row tractor equipment with some horse-drawn machinery. All the tractors were of the all-purpose type.

#### *Technological Changes 1931-1934*

Except for the appearance in 1934 of four-row tractor outfits, the chief change has been a substantial increase each year in the use of two-row horse-drawn equipment. To illustrate: the number of farms depending largely upon one-row equipment declined from 31 to 15 per cent during the period, while those depending upon two-row horse-drawn equipment rose from 43 to 60 per cent of all farms. Farms using only two-row or larger machinery, regardless of type of power used, also increased, from 52 to almost 68 per cent.

#### *Changes Since 1934*

The shift from horse power to tractor power took place with startling rapidity after 1934. Between 1934 and 1935

<sup>3</sup> Carefully selected from a group of 750 farms to represent sizes of farms and systems of farming common to the area.

the proportion of farms using tractor power increased from 24 to 46 per cent. This trend continued through 1936 and 1937. By 1937, 78 per cent of all cooperating farms were depending on tractor power and 68 per cent of the farms were using tractors for all field operations involving machinery, with the exception of feed harvest. The trend toward larger power units, even in the case of tractors, is indicated by the fact that in 1937 the number of four-row tractor outfits had increased to 14 as compared to only four in 1934.

Of course, the shift to larger field machinery during these later years kept pace with the shift from horse power to tractor power. By 1937, 86 per cent of all cooperating farms were using only two-row or larger equipment as compared to 67 per cent in 1934 and 52 per cent in 1931. By 1937 the proportion of farms depending largely on one-row horse-drawn equipment had decreased to approximately 7 per cent as compared to 15 per cent in 1934 and 31 per cent in 1931. At the same time, those depending largely on two-row horse-drawn equipment had decreased from a maximum percentage of 55 in 1934 to only 14 per cent at the beginning of 1937. The nature of these changes is further indicated by the trend in the proportion of farms using two-row equipment for the bulk of their field work regardless of type of power. This proportion increased from 68 per cent in 1931 to 82 per cent in 1934. The proportion has changed very little since then, although slight increases occurred during the past two years to bring this figure to slightly above 84 per cent. The major changes in the sizes of field machinery since 1934 have been a continuation of the decline in the number of farms using one-row equipment and a marked increase in the number of farms using four-row equipment.

The tendency to standardize on two-row horse-drawn equipment previous to 1935 was influenced by the relatively low prices of feed and to the lack of purchasing power of farmers during the depression years. Beginning in 1935, however, the credit situation eased so that it was possible for a larger proportion of the farmers to finance the purchase of tractors and tractor equipment. Then too, feed prices had become relatively high because of crop failure and low yields, and prices of workstock had increased sharply. The result



was a sharp increase in the cost of power on farms using workstock while the cost of tractor power changed little. Another factor which may have been important in the decision of farmers to shift to tractor power was the apparent advantage of this type of power during years of abnormal weather conditions in getting the crop planted during the limited period of time within which planting must be done if a stand is to be established.

There has been a rapid increase in the proportion of farms using but one set of equipment. In 1931, about half did so, whereas, in 1937, 84 per cent used but one set of equipment. Seventy per cent of these were two-row tractor-drawn; 11 per cent were four-row tractor-drawn; 15 per cent two-row horse-drawn; and only 4 per cent were one-row horse-drawn.

It appears that farmers generally are selecting a size of power unit to permit one-man operation of the land under their control. Some adjustments are also being made in the size of farms to fit particular sized power units. However, this latter tendency seems to be less pronounced than the former, even though the average crop acreage increased 22 acres per farm and the total number of farms decreased but slightly between 1930 and 1934 in the five counties from which records were obtained.

An important factor contributing to the tendency for the proportion of farms using but one set of equipment to increase has been the developments in the farm power and machinery field. Previous to about 1925, one-row horse-drawn equipment was about all that was available to farmers. Since then two-row horse-drawn lister-planters and cultivators have been introduced, followed by the all-purpose tractor with adapted equipment. Later, different sizes of tractors were introduced together with such innovations as pneumatic tires and other power increasing improvements. This wide range in size of power units, together with improved equipment, has made it possible for most farmers to select a single power unit adapted to the size of farm under their control.

What happened to numbers of workstock as the above adjustments were being made? During 1931, 1932, and 1933, all cooperating farms averaged slightly over six head of work-

stock per farm. Since then there has been a steady decrease, reaching the low level of 2.7 head per farm in 1937. The net effect of this shift to tractors and to larger power units was an increase of between 20 and 25 per cent in the amount of power available per 100 crop acres. This, in turn, has given the operator greater control of planting and cultivating operations and, at the same time, permitted him to reduce the amount of labor employed, other than labor for hoeing and harvesting.

### *Looking to the Future*

It is interesting to speculate on the future of farm power in this area. If we assume that all farms except those using one set of one-row equipment will shift to tractor power and that tractor farmers will tend to specialize in cotton production to the extent that no workstock will be needed on tractor farms, less than fifty horses or mules would be needed on the 126 farms cooperating in 1937. If, however, we assume that the shift to tractors has gone as far as it will go, workstock can be reduced but little below the present number. What will actually happen probably lies somewhere between these two extremes. There are some farms which because of type of soil, size, and inability of the operator to obtain additional land, or some personal factor involving the operator, may choose, and perhaps rightly so, to continue to operate with workstock for power. On the other hand, all farmers using at least one set of two-row equipment are prospective tractor owners and some of them may find it advisable to shift to tractor power.

Another aspect of this question is the possibility that the number of workstock may increase on tractor operated farms. Supporting this possibility is the fact that because of extreme variations in climatic conditions, and particularly moisture conditions, very few farmers are able to plant all land in cotton within the very limited planting period for cotton. On the other hand, grain sorghums may be planted before or after the optimum planting period for cotton with good prospects for a crop. In harvesting sorghums, especially for grain, it is almost necessary to have at least one team for gathering heads and hauling bundled feed from the field. In

the past, owing to the preponderance of horse power on farms, this need could be filled by borrowing a team from a neighboring farm on which there was a surplus of workstock during the grain harvesting season. As farmers have turned more to tractor power, it has become more difficult to borrow workstock, and it is now almost necessary for tractor farmers to own their teams for grain harvesting. In 1937 of the 126 cooperating farmers, only 27 depended entirely upon workstock for power, whereas 99 were using tractor power for the bulk of field work. On these 99 farms there were only 137 head of workstock, 1.4 per farm. Furthermore, the operators of 86 of these 99 farms used no horse-drawn field machinery and owned only 60 head of workstock. A number of tractor owners, many of whom have disposed of all of their workstock because of their old age, have expressed interest in obtaining a young team of mares to be used in feed harvesting and miscellaneous work on the farm and from which colts could be raised as a supplementary source of income.<sup>4</sup>

The extent to which tractor power will ultimately replace horse power in this area will depend largely on price relationships of workstock and feed, tractors and fuel, and upon such increases in efficiency and adaptability as tractor manufacturers are able to devise. If feed prices return to levels at which they would be low relative to the prices of tractor fuels, then one would expect that the shift to tractor power would be at least temporarily interrupted and if feed prices remain relatively high and workstock remain scarce one would expect a further shift to tractors.

Further increases in the use of tractor power will, however, meet with increasing resistance, unless, machinery manu-

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<sup>4</sup> That more farmers are thinking along this line than formerly is indicated by the ratio between total number of workstock on these farms and the number of colts produced in 1931 and 1932 and in 1936, the last year for which such records are available. In 1931 and 1932, an average of 15 colts were raised per year. During those years there were approximately 900 head of workstock on these farms. This represents a ratio of one colt to each 60 head of workstock. By 1936, the number of colts had increased to a point where the ratio stood at one colt for each 15 head of workstock, which was approximately the number required for average replacement for the 491 head of workstock on farms at the beginning of 1936. A further decrease in workstock of 148 head occurred during 1936 on these same farms, and in view of the tendency of farmers generally to retain or increase the young mare stock, one may logically conclude that the area may now be producing colts in greater numbers than required for normal replacements.

facturers develop efficient power units adapted to the smaller farms.<sup>5</sup> It may be expected that a number of farms will remain small and adapted only to horse power, due to proprietorship and other personal factors, or to provide for the gradual retreat of older farmers from the land. Also, if unemployment remains high, the pressure of population on to the land may prove to be an important resisting factor to the increase in size of farms and to the further shift to tractor power.

*Economic and Social Significance*

The possible effect on size and number of farms associated with the changes in farm power and equipment may be indicated by estimates showing the necessary number of operating units required for the operation of the 1934 crop acreage in the area, assuming levels of operating efficiency attainable with one set of each of the commonly used combinations of power and equipment. These estimates are shown in table 2. They are based on usual rates of performance with different sizes of power and equipment units on the farms studied and upon the estimated optimum length of planting period for cotton and the estimated optimum length of cultivation period for all crops. These figures are not greatly different, however, from the actual acreages handled in 1936 by farmers using comparable sets of equipment. (Last column, table 1.)

TABLE 2. NUMBERS OF OPERATING UNITS NECESSARY ASSUMING VARIOUS LEVELS OF OPERATING EFFICIENCY

	Average acreage of crop land per farm	Number of farms necessary for the operation of the crop acreage in five main counties	
		Number	Percentage of number of farms in 1934
One-row horse-drawn	100	15,260	146
Two-row horse-drawn	180	8,480	81
Two-row tractor-drawn	250	6,100	58
Four-row tractor-drawn	450	3,346	33
Average of all farms (1935 Census)	167	10,421	100

It will be seen that with one set of one-row horse-drawn equipment (practically the only combination used previous

<sup>5</sup> As this is being written a leading manufacturer is advertising for the first time a small general purpose tractor adapted to one-row equipment.

to 1925) almost 50 per cent more farms would be required for the operation of the 1934 crop acreage than were listed in the 1935 census while with two-row horse-drawn equipment throughout, there would result a reduction of almost 20 per cent. With two-row and four-row tractor-drawn equipment the number of farms could be reduced to 58 per cent and 33 per cent, respectively, of the 1934 numbers.

The rapid shift to larger power and equipment units means a smaller resident farm population and the use of relatively large amounts of seasonal labor. These changes are resulting in the need for fewer farm operators and less regular labor.

It is estimated that the total labor used on crops would be reduced 15 per cent, 17 per cent, and 25 per cent, respectively, through the use of two-row horse-drawn, two-row tractor-drawn, and four-row tractor-drawn equipment as compared to the amount of labor required in connection with one-row horse-drawn equipment. This assumes no change in the cropping system with increases in size of power and equipment units. If the maximum possibilities for cotton production are assumed, the maximum decrease in crop labor due to the use of larger machines would be approximately 15 per cent more.

All of this reduction in total labor on crops occurs in connection with those operations which involve field machinery and are normally performed by the operator, members of his family, or regularly employed hired help. It was estimated that with one-row horse-drawn equipment the operator could perform approximately 34 per cent of all labor on crops, whereas, with two-row horse-drawn, two-row tractor-drawn, and four-row tractor-drawn equipment the proportion of the labor on crops that could be performed by the operator are 22 per cent, 15 per cent, and 9 per cent, respectively. Hoeing and harvesting, which are done largely by seasonal labor, are not affected except as the shift to larger power and equipment units may result in a larger proportion of the crop land being devoted to cotton production. In such case more labor would be required for both of these operations, and a larger proportion of it would be hired on farms using the larger power and machinery units.

There remains the possible effect of these changes in size of power and equipment units on incomes. For this purpose price relationships prevailing during the 8-year period 1929-

1936 and average yields obtained on the farms studied during the 5-year period 1931-1935 were used. An average price of nine cents per pound for cotton lint indicates the prevailing price level. The use of the same average yields in all cases is justified by the assumption of average land resources, average management, and equally good control of production operations. Any advantage in the control of production operations would lie with tractor equipment, owing to the possibility of day and night operation. On the basis of these assumptions, it was found that both individual net farm income and total net farm income for the area as a whole would tend to increase as these changes in size of power and equipment units and related changes in size of farms took place. A summary of these income estimates is shown in table 3.

TABLE 3. ESTIMATED NET FARM INCOME PER FARM AND FOR ALL FARMS IN THE FIVE MAIN COUNTIES, ASSUMING FOUR DIFFERENT LEVELS OF OPERATING EFFICIENCY

Level of operating efficiency	Farms needed for operation of 1934 crop acreage	Net farm income	
		Average per farm	Total of all farms
	Number	Dollars	Dollars
One-row horse	15,260	672	10,255,000
Two-row horse	8,480	1,343	11,389,000
Two-row tractor	6,100	2,388	14,567,000
Four-row tractor	3,346	4,418	14,783,000

Directly or indirectly, the changes described above will result in significant changes in the social and economic life of the area. Some of the more clearly indicated of these changes are better farm homes, increased standards of living on farms, decreased enrollment in rural schools, and acute labor problems growing out of the increasing dependence of farmers on seasonal labor. The labor problem may become an important factor in bringing about at an early date the adoption of labor saving devices for the harvesting of cotton and grain sorghums.

The most important immediate problem confronting the people of this area and similar areas, and of course the country as a whole, is that of finding a place in the economic system for the displaced operators and farm laborers. Unless



useful work can be found for these people, most of the advantages gained through the adoption of large power and equipment units will be lost. The more efficient and better financed of these operators have been, and for a time at least will be, able to find places on the more productive undeveloped lands within the area. The less efficient and poorly financed operators apparently have three alternatives, none of which are particularly promising. In the first place, they may migrate to less productive land in lower rainfall zones on the western fringe of the area or in older areas to the east. Secondly, they may find their way into other occupations, in most cases as laborers. Thirdly, they may remain in the area as agricultural laborers with small chance for employment except during the hoeing and harvesting seasons, and perhaps be forced to depend upon relief during a large part of the year. The latter alternative has been the one most frequently resorted to during the past three or four years. A happy solution, of course, would be an increase in industrial and commercial activities sufficient to absorb the surplus farm population.

Thus, we see from the above discussion that in little more than a decade cotton farmers in the High Plains of Texas have replaced one-row equipment with two-row and four-row equipment, and have practically replaced animal power with mechanical power. As a result, the amount of crop land that can be handled by a farm family has increased in this short space of time from approximately 100 to approximately 450 acres. While it is not possible at this time to definitely determine the full extent of the consequences arising out of these changes in the use of power and equipment, we cannot escape the implication that far-reaching social and economic changes necessarily must follow. It remains to be seen whether we shall be able to reshape our economic and social institutions to permit society to take full advantage of increased efficiency on individual farms and at the same time cushion the impact of these changes on an important group in our population.

## THE SOIL AND THE LAW: II<sup>1</sup>

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**T**HE first installment of this article discussed the State Soil Conservation Districts Laws as an illustration of the way in which Federal and State constitutional provisions come to play upon a State land program and create the institutional environment within which it must be made to operate. In this installment we shall, from the same point of view, consider a Federal land program.

In the case of State programs dealing with the soil, as we have seen, the most crucial issues are those that revolve around the concepts due process, police power, public purpose, equal protection of the laws, and delegation of legislative power. In the case of Federal legislation in this field the central question must always be the existence of Federal power to deal with the matter at all. Only when this central question has been answered in favor of Federal power can we arrive at such other issues as delegation of legislative power, due process and the like. These other issues are not dissimilar when applied to Federal legislation from the form they take in the case of State programs.

From the point of view of land-use programs, the two principal legislative powers of Congress are the power to regulate foreign and interstate commerce, and the so-called general spending power. We have already touched briefly upon the scope of the commerce-regulating power in this field.<sup>2</sup> It is appropriate to consider the spending power more fully, because of the fact that so large a part of the financing of soil programs is being carried by the Federal Government. The recent interesting judicial history of the adjustment program of the Agricultural Adjustment Administration, in which the issue turned on the scope of the spending power, makes that program particularly appropriate for discussion.

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<sup>1</sup> The first installment of this article appeared in the May, 1938 issue of this JOURNAL, XX, 430-447.

<sup>2</sup> See XX *J.F.E.* 430, at pages 434-436 (May, 1938).

*The Agricultural Adjustment Program*

It is necessary to recall the essential characteristics of the agricultural adjustment program, so that we may understand how the constitutional and other legal issues arise. Under the original Agricultural Adjustment Act, approved May 12, 1933, the Secretary of Agriculture was authorized to enter into contracts with farmers, under which the farmer, in return for a cash benefit payment, agreed to retire a stated percentage of his acreage from the production of particular commodities. The revenue for these payments was to be derived from the levy of taxes on the processing of the commodities involved.

Numerous processors brought suit to enjoin collection of the processing taxes, on the ground, among others, that the processing tax-benefit contract program does not fall within the powers conferred upon the national government. The processors contended that the expenditure of the tax proceeds for payments to farmers under benefit contracts was unconstitutional, because the purpose of the expenditure was to control the volume of agricultural production, and the power to effect such control has not been granted to Congress in the Constitution. The attempted exercise of a power not conferred, it was urged, violates the tenth amendment to the Federal Constitution which reserves to the States or to the people all power not conferred upon the Federal Government. The taxes, it was said, must fall with the payment provisions because they are all parts of a single plan, and that plan it is outside the power of Congress to effectuate.

In defense of the constitutional validity of the program the Government contended that the challenged expenditure was a proper exercise of the general spending power conferred upon Congress. The Congress is given power in Article I, section 8, clause 1 of the Federal Constitution "to lay and collect . . . excises to . . . provide for the . . . general welfare of the United States." The power to collect taxes for this purpose necessarily includes the power to spend the proceeds for the purpose. These expenditures, it was urged, do provide for the general welfare inasmuch as the benefit contract program is essential to the recovery of American agriculture

from the depression under which it has been operating since 1920 and, in turn, general national recovery from the depression is impeded by the depression in agriculture and may be expected largely to follow from recovery in agriculture. The program does not contravene the tenth amendment inasmuch as the Congress is exercising only a power expressly granted to it—the power to tax and spend.

The nub of the government's argument may be stated thus: Even if it be assumed that the Congress is not given power in the Constitution to regulate the volume of agricultural production, by mandates which shall have the force of law and shall carry penalties for their nonobservance, it does not follow that the exercise of the spending power becomes invalid merely because its exercise may accomplish something of the same result that a regulatory statute might achieve. Where a given result may be accomplished in either of two ways (that is to say, in the present case, either by enforcing compliance with legal regulations or by purchasing voluntary compliance through payments given only to those who choose to comply) and the Constitution authorizes the Congress to use only one of those ways, the use of the authorized way does not become unconstitutional because the other way is not authorized.

It will be seen that the heart of the issue is: Just what are the limits of the "general spending power" of Congress.

### *The General Spending Power*

It is a striking fact that in all our national history prior to the passage of the Agricultural Adjustment Act, the Supreme Court had in no case judicially determined the scope of the general spending power of Congress. Several times the question had been presented to the court, but on each occasion the court disposed of the case on other grounds, generally meeting the spending power issue with a statement that the particular litigant who raised the issue had no standing in court, for one reason or another, to insist upon an adjudication of the issue. In 1892, on the question of the validity of the provision for subsidies to sugar producers in the McKinley Tariff Act of 1890; in 1921, in connection with the challenge to the power of Congress to provide for the Federal

Land Banks; and in 1923, on the issue of the power of Congress to give grants-in-aid to the States under the Shepherd-Towner Act for maternity aid, the Supreme Court permitted specific instances of the exercise of a presumed general spending power to continue, while leaving their constitutional validity undetermined. The Supreme Court's decision in *United States v. Butler*, 297 U.S. 1, (1936), which for the first time attempted to define the general spending power, is therefore one of the highest significance.

Since rhetoric, and even punctuation, have played a large part in the dispute over the meaning of clause 1 of section 8 of article I of the Constitution, let us get it before us in full:

"Sec. 8. The Congress shall have power:

To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States;

To borrow money . . . ;

To regulate commerce . . . ;

To . . . ;" [Seventeen clauses follow the quoted first clause in section 8, each set forth as a new paragraph in this manner, and each beginning with the preposition "To."]

The first clause of section 8 is generally referred to as the "general welfare clause." In this discussion we have been citing it as the source of the "power to tax and spend" or the "general spending power."

Early in our history three views developed as to the proper interpretation to be given the general welfare clause. First, it was said by some that the clause should be construed as granting to Congress the power to promote the general welfare, that is, the power to promote it in any way usually open to a legislature—by regulation, taxation, expenditure, or other means. This reading of the clause views it as though the comma after the word "excises" were a semi-colon. Supporters of this view have unearthed the interesting fact that the resolution on this provision which was adopted by the Constitutional Convention does, in fact, seem to have had a semi-colon after the word "excises," but the provision as revised by the Reporter and as finally adopted by the Convention contains a comma at that point. This view has generally

been rejected, on the ground that if adopted it confers upon the Congress the general power to promote the general welfare by any type of legislation, and would seem to make unnecessary the ensuing grant of a long list of specific powers. It would also deprive of significance the tenth amendment, reserving ungranted powers.

A second view has been that the general welfare clause is merely a limitation on the power to tax and spend, so that the proceeds of taxation may be spent only to pay debts, provide defense, or provide for the general welfare, but that *the power to tax and spend is itself further limited by the subsequently enumerated powers*. Under this view, the Congress may tax and spend to pay debts or to provide for the common defense or general welfare, only as a step in effectuating one or more of the other powers specifically granted, such as the power to carry on war, to regulate foreign and interstate commerce, to establish post-offices and post roads. The general welfare clause is thus read as though it were followed by the words "in the manner following, viz."

This view, known as the Madisonian theory, has often been objected to on the ground that it would deprive the clause conferring the power to tax and spend of all efficacy. In the structure of section 8 of Article I, as we have seen, the power to tax and spend is conferred as an independent power, as though it were coordinate with the other powers granted. There is nothing in the language of the Constitution to indicate that that power is intended to be merely an instrument of the other powers, any more than there is an indication that any of the other powers is intended merely to be an instrument of the power to tax and spend. A separate provision of the Constitution (the eighteenth clause of section 8) authorizes Congress to make all laws necessary and proper for carrying into effect the granted powers. The Madisonian interpretation of the general welfare clause would make of it an unnecessary duplication of the "necessary and proper" clause.

A third view, which expresses a middle ground between the other two, is commonly known as the Hamiltonian theory. This view maintains that the general welfare clause is a limitation on the power to tax and spend rather than an in-



dependent grant of legislative power, but that the power to tax and spend is independent of the subsequently enumerated powers. Hence, under this view, although the general welfare clause does not authorize Congress to promote the general welfare by direct regulatory measures, it does authorize the Congress to tax and spend in order to promote that welfare. It may be noted that this view gives a literal reading of the clause, giving full effect to structure, punctuation, and the scope of the remaining provisions.

In the brief which the Government filed with the Supreme Court in defense of the agricultural adjustment program, the Government took the position that the third interpretation just summarized, the Hamiltonian theory, is the correct view of the general welfare clause. Conceding, therefore, that that clause<sup>3</sup> did not confer upon the Congress the power to control agricultural production by mandatory regulations, the Government maintained that the clause did confer upon the Congress the power to achieve such control of agricultural production as will result from so spending the proceeds of taxation as to induce farmers voluntarily to comply with agreed acreage reductions.

*The Decision in United States v. Butler*

On January 6, 1936, Mr. Justice Roberts delivered the opinion of the court, holding that the processing tax-benefit contract program was unconstitutional because outside Federal power. In that opinion Chief Justice Hughes and Justices Van Devanter, McReynolds, Sutherland, and Butler concurred. Mr. Justice Stone delivered a dissenting opinion to the effect that the program was a constitutional exercise of the general spending power of Congress. Justices Brandeis and Cardozo concurred in the opinion of Mr. Justice Stone.

Mr. Justice Roberts' opinion stated the three interpretations of the general welfare clause we have summarized above. Then, surprisingly enough in view of the result of the case, the opinion endorses the Hamiltonian or middle-ground view which, we have seen, was the interpretation of the

<sup>3</sup> It should be noted that this concession does not answer the question whether such regulation may be achieved under one of the *regulatory* powers conferred upon Congress, such as the power to regulate interstate and foreign commerce.

clause urged upon the court by the Government. This endorsement of the Hamiltonian theory is an endorsement with a difference, however, and the court must be said to have added a fourth view to those that have so long battled for acceptance.

The confines of the power to tax and spend, says the majority opinion, "are set in the clause which confers it, and not in those of section 8 which bestow and define the legislative powers of the Congress." It follows that the general welfare clause, although it does not authorize Congress to promote the general welfare by regulatory measures, does authorize the Congress to tax and spend in order to promote the general welfare. But it follows further—and this is crucial—that the power to tax and spend is an independent coordinate power which may be exercised toward objectives other than those within the reach of the other powers conferred upon Congress in the Constitution. This conclusion is expressly drawn in the majority opinion, when it is said: "It results that the power of Congress to authorize expenditure of public moneys for public purposes is not limited by the direct grants of legislative power found in the Constitution."

How then does it happen that the program of spending tax proceeds to induce farmers to cooperate in acreage reduction as part of a program of agricultural adjustment is said to be outside congressional power? We have been told that the "confines" of the power to tax and spend "are set in the clause which confers it." Does this mean that the court has concluded that the appropriation of money for benefit payments to farmers as part of such a program will not promote the general welfare? For, no other limit upon the power to tax and spend seems to be present within section 8. An expenditure must be for the general, rather than local, welfare, but no further limitation seems to exist. No; the court does not conclude that the expenditure will not promote the general welfare. The limitation is found elsewhere. The court says: "We are not now required to ascertain the scope of the phrase 'general welfare of the United States' or to determine whether an appropriation in aid of agriculture falls within it." And why is this true? Because, "The Act invades the reserved rights of the States," which reservation is made by the tenth amendment.

That there is a remarkable internal inconsistency in this position of the court may be more apparent if we paraphrase the court's reasoning and number its successive steps:

1. The tenth amendment reserves to the States or to the people all, but only, those powers not granted to the United States;

2. One of the powers admittedly granted to the United States is the power to provide for the general welfare by spending money to that end;

3. This power is admittedly<sup>4</sup> a broad power and everything that falls within that power, being within the power of the United States, is not within the field of reserved powers;

4. The question which must be decided is whether the particular expenditures being made fall within the general spending power;

5. It is not, however, necessary to define the limits of the general spending power because the present expenditures seek to control agricultural production and no power to achieve such control has been conferred upon Congress. The use of the spending power to achieve such control is hence forbidden by the tenth amendment.

With the statements numbered 1 to 4, inclusive, there is no quarrel. The fifth statement, however, converts the discussion into argument in a circle. If we do not define the limits of the general spending power, how can we conclude that the expenditure under review falls outside those limits? And it is only if the expenditure does fall outside those limits that it can violate the tenth amendment. It will not do to point to the fact that the purpose of the expenditure under review is to control agricultural production, and to the further fact that no express power to control agricultural production has been conferred upon Congress. For such an argument would assume that the spending power may not be exercised except to advance some other governmental power expressly conferred upon Congress. This the court has itself denied by holding that "The power of Congress to authorize expenditure of public moneys for public purposes is not limited by the direct grants of legislative power found in the Constitution," but that it is an independent coordinate power which may reach objectives other than those aimed at by the "direct grants of legislative power."

The opinion of the majority of the court is, thus, subject to

<sup>4</sup> Mr. Justice Roberts says, in part: "How great is the extent of that range, [the range of legislative discretion] when the subject is the promotion of the general welfare of the United States, we need hardly remark."

a serious internal inconsistency—but, this is true only so long as we assume with the court that it is endorsing the Hamiltonian view of the general welfare clause. For, in fact, the majority opinion is doing quite something else. Acceptance of the Hamiltonian view would pose for the court the single question whether the particular expenditure authorized in the Agricultural Adjustment Act will or will not promote the general welfare. That question the court refused to answer. Rather, the court has read the tenth amendment as though it contained a qualification upon the power to tax and spend which is admittedly granted to Congress. Mr. Justice Stone in his dissenting opinion has stated this most succinctly. The majority of the court is, he says, in effect announcing: "Let the expenditure be to promote the general welfare, still, if it is needful in order to insure its use for the intended purpose to influence any action which Congress cannot command because within the sphere of State government, the expenditure is unconstitutional."

This use of the tenth amendment as a limitation upon the powers granted to Congress is certainly not dictated by the terms of that amendment. The amendment reads: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States, respectively, or to the people." The subject of this sentence is "The powers not delegated . . . nor prohibited . . ." The predicate refers only to the subject and says nothing concerning the powers that are delegated to the United States. A reservation of powers not granted falls far short of expressing a limitation upon powers that are granted.

But, whether logical or not, whether permitted by the language of the tenth amendment or not, so the court majority are reading the general welfare clause and the tenth amendment. On this view the inconsistency disappears, but words of a Constitution have ceased to mean what they say.<sup>5</sup>

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<sup>5</sup> In the dissenting opinion Mr. Justice Stone comments that, "Interpretation of our great charter of government which proceeds on any assumption that the responsibility for the preservation of our institutions is the exclusive concern of any one of the three branches of government, or that it alone can save them from destruction is far more likely, in the long run, 'to obliterate the constituent members' of 'an indestructible union of indestructible states' than the frank recognition that language, even of a constitution, may mean what it says: That the power to tax and spend includes the power to relieve a nation-wide economic maladjustment by conditional gifts of money."

We must notice a further peculiarity which results from the court's interpretation of the general spending power. The tenth amendment is couched in general terms, as we have seen. It does not refer to any one of the granted powers but reserves all powers not granted. If that amendment is now to be read as a limitation upon the general spending power, must it not also be read as a limitation upon the exercise of any of the other granted powers. We know, however, from past decisions of the court, that activities in themselves outside the regulatory powers of Congress may be interfered with or even directly regulated as incident to the exercise of one of the powers granted to Congress. We cannot do better than quote further from the dissenting opinion of Mr. Justice Stone:

"It is upon the conviction that State power is infringed by purchased regulation of agricultural production that chief reliance is placed. It is insisted that, while the Constitution gives the Congress, in specific and unambiguous terms, the power to tax and spend, the power is subject to limitations which do not find their origin in any express provision of the Constitution and to which *other expressly delegated powers are not subject*. . . Congress, through the Interstate Commerce Commission has set aside intrastate railroad rates. It has made and destroyed intrastate industries by raising or lowering tariffs. These results are said to be permissible because they are incidents of the commerce power and the power to levy duties on imports. See *Minnesota Rate Cases*, 230 U. S. 352; *Shreveport Rate Cases*, 234 U. S. 342; *Board of Trustees of the University of Illinois v. United States*, 289 U. S. 48. The only conclusion to be drawn is that results become lawful when they are incidents of those powers, but unlawful when incident to the similarly granted power to tax and spend." [Italics supplied]

Whether we find the logic of the majority opinion tenable or otherwise, that opinion is today (together with the opinion in the Social Security Act case, discussed below) the only authoritative interpretation of the general spending power, and will stand until modified or overruled by the court, or superseded by constitutional amendment. It is important, therefore, to know just what the opinion lays down as a guide for future action. Our analysis has led us to the conclusion that, though the majority opinion announces an acceptance of the Hamiltonian theory, the limitation upon that theory which it finds in the tenth amendment makes the

court's conclusion virtually identical with the Madisonian view which it purports to reject. Both the Madisonian view and the majority opinion in the *Butler* case conclude that the proceeds of taxation may not be spent in such a way as to reach an objective not within the reach of one of the other legislative powers conferred upon Congress. We have seen above that this view deprives the power to tax and spend of all independent efficacy. Nevertheless, whether comforting or not, we may at least now know where we stand with reference to the spending power. But . . . may we?

There is internal evidence in the majority opinion that the court shrank from the consequences of its own conclusion. It therefore drew back—not alone by stating that it was approving the Hamiltonian view, but also by distinguishing between various types of exercise of the spending power. Some types of exercise of the spending power, we are in effect told, may be valid, even though they involve expenditures upon objects possibly not attainable under the other legislative powers. We must therefore seek further in the opinion for light as to the permissible expenditures.

The majority opinion first warns us that some of the expenditures which Congress has been making for long periods of time have not been challenged because no remedy was open for testing their constitutionality in the courts. We are left free to conclude that some of them might be rejected by the court on proper occasion. The majority opinion then adds: "We are not here concerned with a conditional appropriation of money, nor with a provision that if certain conditions are not complied with the appropriation shall no longer be available. By the Agricultural Adjustment Act the amount of the tax is appropriated to be expended only in payment under contracts whereby the parties bind themselves to regulation by the Federal Government. There is an obvious difference between a statute stating the conditions upon which money shall be expended and one effective only upon assumption of a contractual obligation to submit to a regulation which otherwise could not be enforced."

Does the quoted language mean that if no contracts with farmers were executed by the Secretary, but the Secretary announced that all farmers who complied with certain con-



ditions would be eligible to receive payments, and then made payments to all farmers who proved that they had in fact complied, the program would be valid? Seemingly this cannot be so, because the written contract is, after all, but a reduction to writing of the farmers' announced intention to comply with the Secretary's conditions. In any event, where the Secretary announces conditions in advance, and then makes payments to those who live up to the conditions, the law knows this as a "unilateral" contract as distinguished from a "bilateral" contract, which is one wherein the two parties mutually agree to certain performances. Surely the Constitution cannot be said to distinguish in the case of the spending power between unilateral and bilateral contracts.

There is other language in the opinion from which it might be argued that the court is prepared to conclude that while the tenth amendment prevents the use of the spending power for payments to farmers in this manner, such payments may validly be made to States on the condition that the States in turn disburse the funds to farmers in return for appropriate undertakings by the farmers. True, one will look in vain in the general welfare clause for any distinction between States and citizens as recipients of payments under the spending power—but no matter. What does matter is that this raises the question as to the types of conditions which the Federal Government may impose upon State acceptance of payments without violating the tenth amendment.

Still further, there are references in the opinion to agriculture as being a local matter. At one point Mr. Justice Roberts says that agricultural production is "a purely local activity." At another point he says "It does not help to declare that local conditions throughout the Nation have created a situation of national concern; for this is but to say that whenever there is a wide-spread similarity of local conditions, Congress may ignore constitutional limitations upon its own powers and usurp those reserved to the States." Does this mean that agriculture is inherently a local activity, that the general welfare is not involved in its well-being, and therefore that the tenth amendment has placed agriculture entirely outside the scope of legitimate Federal concern or activity?

The Supreme Court's first essay at a definition of the gen-

eral spending power has thus created no little uncertainty. We must wait for clarification in future opinions, unless the language of the Constitution be amended in the meantime.

But the Federal concern for the problems of agriculture did not cease on January 6, 1936. Hard upon the heels of the court's decision, therefore, Congress enacted the Soil Conservation and Domestic Allotment Act of 1936. And, on February 16, 1938, the President approved the Agricultural Adjustment Act of 1938. What of the constitutionality of these programs in the light of the decision in *United States v. Butler*.

### *The Agricultural Conservation Program*

The agricultural conservation program instituted under the Soil Conservation and Domestic Allotment Act which the President approved on February 29, 1936, just 54 days after invalidation of the processing tax-benefit payment program, has been generally considered to be an interstitial program, to fill the need pending formulation of a more permanent program. An attempt was made to avoid the characteristics of the original program which the Supreme Court had condemned in *United States v. Butler*. But the tailoring process which this need dictated left the program critically weak.

The court's decision in the *Butler* case illegitimated production control as a Federal objective. The net distinction between the original adjustment programs and the conservation programs under the Soil Conservation and Domestic Allotment Act might therefore possibly be summarized as follows: In the original programs production control was the central objective, with soil conservation and good farm management as incidental goods which were sought to be achieved as far as possible. In the agricultural conservation programs soil conservation and good farm management were the central objectives, while a limited amount of production control not infrequently developed as a natural by-product. Such indirect production control would normally result to the extent that the crops for which production control programs had earlier been instituted were, in fact, found to be erosion-producing and soil depleting crops.

The new Act declared it to be the policy of Congress to pre-

serve soil fertility and to diminish improper and promote proper land uses. To this end the Secretary was authorized to make payments or grants of other aid to agricultural producers, such payments to be measured by their adoption of land-use practices designed to achieve soil restoration, soil conservation, and the control of erosion. It was expressly provided that the Secretary shall not have power to enter into any contract binding upon any producer.

Thus, the attempt to purchase voluntary farmer compliance with agreed acreage reductions in the interest of control of the volume of agricultural production was abandoned. Further, in lieu of the execution of written contracts, the Secretary offered to make payments to those producers who complied with pre-announced conditions. Still further, the program was to be financed by a direct appropriation out of the Treasury rather than by the levying of processing taxes. The attempt to comply with the language of the majority opinion in *United States v. Butler* is obvious. Since no judicial decisions have been rendered upon the constitutionality of this program, we are without light on the question whether this interpretation of the permissible scope of the spending power will meet judicial sanction.

#### *The Agricultural Adjustment Act of 1938*

The incidental amount of production control achievable under the agricultural conservation programs has not served to prevent the reaccumulation of surpluses and the threat of even greater accumulations. The pressure for renewed Federal legislation for production control therefore steadily grew.

The present Act provides for continuation of the agricultural conservation program. In addition, under designated conditions, loans are to be made on agricultural commodities to producers who are cooperating in the conservation programs, (and, under certain conditions and limitations, to non-cooperators) in order to build up reserves or an "ever-normal granary" of particular commodities. When the reserves reach stated levels, marketing allotments may, under certain conditions, be established in the interest of controlling the total volume of particular agricultural commodities to reach the markets of the Nation. Other provisions of the

Act, among them crop insurance for wheat, do not concern us here.

It is important to distinguish the first two steps in this new program—the making of cash payments to farmers in return for conservation practices, and the extension of loans on agricultural commodities—from the third step, which is the assignment of marketing quotas. The first two depend for their constitutional validity chiefly upon the power to tax and spend. The third depends chiefly upon the power to regulate interstate and foreign commerce.

It is not intended here to undertake any extended analysis of the relevant arguments on these constitutional issues. Our concern is merely to understand the immediate relevance of the decision in *United States v. Butler*. It will be apparent that the program of making payments to farmers in return for their following designated conservation practices, and extending commodity loans to the cooperating farmers, is an exercise of the power to tax and spend not obviously dissimilar from the program condemned in *United States v. Butler*. The majority opinion in the *Butler* case emphasized that the power to control agricultural production has not been expressly conferred upon Congress; neither has the power to conserve the soil.

The new Act proposes to go farther than the original program. Where the original program sought to purchase compliance with agreed acreage reductions, the new program proposes to regulate marketing (and hence to exert an important influence upon production), and to assess penalties upon non-conformers.<sup>6</sup> The option open to each producer under the old program to sign no contract, receive no benefit payments, and produce for sale at will, without penalty, is not to be open under the new program. The new Act relies for this regulatory feature, however, not upon the power to tax and spend, but upon the power to regulate commerce among the several States and with foreign nations. The scope

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<sup>6</sup> To limit the volume of commodities which may be marketed may, in the case of some commodities and under certain conditions, limit the volume which will be produced. The new program will regulate not production but marketing, and unlimited production for home consumption will incur no penalties.

of the commerce power was not in issue in the *Butler* case.<sup>7</sup> Whether the implications of the decision in that case cast doubt upon the validity of the proposed program under the commerce power is a debatable question.

Since the decision in the *Butler* case, however, some very insignificant trends in constitutional interpretation have appeared. The decisions of the Supreme Court, in May 1937, in the cases sustaining the constitutionality of the Social Security Act have affirmed the existence in the Congress of a broad power to appropriate the proceeds of taxation for all purposes which will aid the general welfare. In turn, the decisions sustaining the validity of the National Labor Relations Act have revived the broad sweep of the power to regulate interstate and foreign commerce which the great Chief Justice, John Marshall, originally affirmed in *Gibbons v. Ogden*, as long ago as 1824.

It may be noted in passing, also, that there has been a slight change in the personnel of the Supreme Court. The vote on the original adjustment program was 6 to 3. Justices Van Devanter and Sutherland, who were 2 of the 6, have since retired. It is at least conceivable that Justices Black and Reed, the latest appointees to the court would, on the original question, have voted with the minority rather than with the majority. It is still open to the three dissenting judges to reaffirm in future cases the position stated in their dissent. It is therefore possible that even the original adjustment program, as well as the present program, in so far as they deal with the exercise of the power to tax and spend, will be supported by 5 of the 9 justices. At least 2 of the remaining 4 have, in the Social Security Act and National Labor Relations Act cases, reversed<sup>8</sup> positions formerly taken by

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<sup>7</sup> The majority opinion said in part: "Despite a reference in its first section to a burden upon, and an obstruction of the normal currents of commerce, the act under review does not purport to regulate transactions in interstate or foreign commerce. . . . Indeed, the Government does not attempt to uphold the validity of the act on the basis of the commerce clause, which, for the purpose of the present case, may be put aside as irrelevant."

<sup>8</sup> This is a matter of personal judgment. In the court's opinions in the Social Security and Labor Relations Act cases, the earlier decisions in the Agricultural Adjustment and Bituminous Coal Act cases were not overruled, but "distinguished."

them. It is again possible that one or both of these members of the court may feel that the decision in the *Butler* case should not stand in the way of the new legislation. The importance of court personnel in the adjudication of constitutional issues is a point to which we shall return.

### *Present Trends and Needs*

In this final section let us draw the threads together. What changes are needed in the various sets of legal rules, or perhaps in our legal institutions, to enable the establishment and effective operation of the economic and governmental relations required for proper land use? What are the present trends in judicial decisions, and will those trends raise or lower the legal barriers to the effective operation of those relations?

### *The Judge and the Constitution*

The careful reader of the foregoing discussion will have seen that there is an enormous field for free and independent exercise of discretion by judges in deciding constitutional and other legal issues. He will have seen that the act of judicial decision is an act of choice among competing analogies presented by competing precedents. He will have seen, also, that the language of constitutions presents nearly limitless opportunity for varying interpretations.

There are some provisions in constitutions and in statutes which are sufficiently specific to enable reasonable men to agree readily on their meaning. Thus, the Federal Constitution provides that "The Congress shall assemble at least once in every year," and that "The Senate shall have the sole power to try all impeachments." Provisions such as these are reasonably fixed and certain in content. A court in giving effect to them is letting the Constitution speak. But the important provisions of constitutions can almost never be couched in terms equally specific and unmistakable. Consider such provisions as: "The Congress shall have power: To lay and collect taxes . . . to . . . provide for the . . . general welfare of the United States"; "To regulate commerce . . . among the several States"; "The citizens of each State shall be entitled to all privileges and immunities of citizens in the several States"; "Congress shall make no law . . .



abridging the freedom of speech, or of the press"; No State shall "deprive any person of life, liberty or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

As we have seen in the foregoing discussion, terms like "due process of law," "reasonable," "arbitrary," "real and substantial relation to the object sought to be attained," "capricious," "public purpose," "general welfare," "equal protection of the laws," "delegation of legislative power," "commerce among the several States," are variables which mean different things to different people. In the last analysis these basic constitutional provisions mean what the judges who are deciding particular cases think they ought to mean, and hence say they mean.

Edward S. Corwin, in his book "The Twilight of the Supreme Court," subtitled "A History of our Constitutional Theory," in discussing particularly interpretation of the Federal Constitution by the United States Supreme Court, has stated this point succinctly. He has said:

"... The Court, as heir to the accumulated doctrines of its predecessors, now finds itself in possession of such a variety of instruments of constitutional exegesis that it is able to achieve almost any result in the field of constitutional interpretation which it considers desirable, and that without flagrant departure from judicial good form. Indeed, it is altogether apparent that the Court was in actual possession and in active exercise of this "sovereign prerogative of choice" some years before most of the Justices were intellectually aware of it, albeit the present Chief Justice was not among the unsophisticates. Even prior to his first appointment to the Supreme Bench, as the successor of Justice Brewer, Mr. Hughes had spoken the notable words quoted at the outset of this volume: '*We are under a Constitution, but the Constitution is what the judges say it is.*' Horribly as it must have grated upon the ears of Mr. Hughes's predecessor, this incisive statement describes with accuracy not only an achieved result but a still operative process as well." (Dr. Corwin's italics.)

Dr. Corwin has said, further, that interpretation of the Constitution by the Supreme Court falls into "three tolerably distinguishable periods." The first reaches to the death of John Marshall, and is said to be the period of the dominance

of the Constitutional Document. "The tradition concerning the original establishment of the Constitution was still fresh" and the theories of the framers of the Constitution, readily available in *The Federalist*, were much relied upon by the court. The second period is said to stretch from the accession of Chief Justice Taney in 1835 to the death of Justice Brewer in 1910. Dr. Corwin calls this the period of Constitutional Theory, during which the text of the Constitution tended to fade into the background and *The Federalist* ceased to be cited. "Among the theories which in one way or other received the court's sanctifying accolade during this period were the notion of Dual Federalism, the doctrine of the Police Power, the taboo on delegated legislative power, the derived doctrine of Due Process of Law, the conception of liberty as Freedom of Contract, and still others." The third period is said to be the present and is referred to as that of "Judicial Review pure and simple," under which the court's legislative discretion is exercised in the form of a review of the constitutionality of acts of Congress and of the State legislatures.

Perhaps it should be emphasized that the very nature of a constitution makes it imperative that its provisions shall be couched in broad general phrases. A constitution is built to endure over a reasonably extended period of time. It must seek, therefore, to lay down general principles, leaving to each generation the nice adjustment of the principles to the varying problems with which each must deal. But if each generation must interpret and apply, then the constitution is at the mercy of its interpreters. With this knowledge of where the "ultimate power" lies, let us glance briefly at some present trends and present needs.

#### *Present Trends and Needs*

A consideration of land programs lends weight to the widespread conviction that there has developed an historical necessity for an extension of Federal functions and of the corresponding Federal constitutional power.

There is need for the Federal Government to have the power to spend the proceeds of national taxation in such manner as the Congress believes will promote the general welfare. That power, it seems clear, should carry with it the

power to impose such conditions upon the acceptance, and expenditure of the money by States, public agencies, or individuals as are reasonably calculated to realize the purposes for which the expenditure is made. The majority opinion of the Supreme Court in *United States v. Butler*, which invalidated the original agricultural adjustment program, while affirming the existence of this power, attempted to surround it with nearly fatal restrictions. More recent decisions of the Supreme Court, in particular the decision in *Helvering v. Davis*, in which Mr. Justice Cardozo delivered the opinion of the court on May 24, 1937, sustaining the validity of the old-age benefit provisions of the Social Security Act, give ground for hope that the decision in *United States v. Butler* will be gradually circumscribed and perhaps in time overruled, and, that a broad scope for the Federal spending power will be established by the court. That result may be achieved by denying to taxpayers the opportunity to challenge Federal appropriations, as in the recent cases involving loans to counties and municipalities for constructing electricity-distribution systems, or by affirming the broad scope of the power, as in *Helvering v. Davis*. Both trends are in evidence.

In addition to a general spending power, effective administration of land use programs will require the exercise of a broad Federal regulatory power over "commerce among the several States." Here, again, the recent decisions invalidating the Railroad Pension Act, the National Industrial Recovery Act, and the labor provisions of the Bituminous Coal Conservation Act speak a different language from that spoken in the still more recent decisions sustaining the National Labor Relations Act. These shifts and trends in recent judicial decision are themselves eloquent testimony to the central role played by independent judicial discretion in the decision of constitutional issues.

Is there need for a constitutional amendment conferring upon Congress power to control floods and soil erosion, or perhaps the general power to conserve natural resources? The answer to this question will in large part depend upon the scope which the judicial decisions of the next few years will lend to the spending and commerce-regulating powers of Congress. A broad scope for those powers may be sufficient to en-

able such Federal action in this field as is desired. It will depend, further, on the effectiveness of the newly instituted State programs in this field. If the States fail to provide for the needed land-use regulation for erosion-control and flood-control, if interstate soil and water conservation districts prove necessary, if State action fails to control destructive logging and other practices in private forests, to cite three instances out of many, the suggested amendment would permit such supplementary Federal action as may be considered desirable.

On the side of governmental action by the States, the most imperative needs are for a broader judicial definition of the scope of State police power, and of the "public purposes" for which the proceeds of State taxation may be spent. State regulatory legislation under the police power must run the gamut, not only of the respective State supreme courts, but also of the United States Supreme Court. If the recent decision of the United States Supreme Court in *Nebbia v. United States*, sustaining the validity of the New York milk price regulatory statute, is adhered to and followed, the police power of the States should be found adequately broad for the needs of regulation. (We have quoted from the decision in our discussion of the police power.)<sup>9</sup> That decision gives a broader scope to the police power than has been granted by many of the State supreme courts.

It should be noted that if a State supreme court holds invalid a State regulatory statute on the ground that it violates the due process provision of the State constitution, that decision is not reviewable by the United States Supreme Court. For this reason, a State supreme court may enforce for State legislation a narrower version of the police power than the United States Supreme Court is prepared to enforce under the fourteenth amendment to the Federal Constitution. The States differ widely in the scope which their respective supreme courts today give to the police power.

The United States Supreme Court has held that a Federal taxpayer has no standing in court to challenge the validity of a Federal appropriation, on the theory that a taxpayer's

<sup>9</sup> See XX *J.F.E.* 430, at page 437 (May, 1938).

contribution to the Federal revenues, and hence his "interest" in the manner of their expenditure, is so small that he sustains no "direct injury" from the expenditure. Under some circumstances—as in the case of *United States v. Butler* where the court found a distinction between such a case and a case where a tax is levied and an appropriation made as steps in a single program—a taxpayer is permitted to challenge an appropriation. (We need no longer be surprised to find that rules of constitutional law have their exceptions.) In nearly all of the States, however, the State courts have held that a State taxpayer has standing in court to challenge the validity of any State appropriation. State appropriations are valid only if for a "public purpose," as we have seen above. Our discussion of the public purpose issue has indicated, however, that there is a slow trend toward liberalizing the scope of the purposes which the courts will recognize as "public."

We are in need, further, of a practical definition of what constitutes "improper delegation of legislative power." Until recently, in the case of Federal action the Supreme Court had asserted the existence of a prohibition against improper delegation, but had sustained every challenged instance of delegation. Constitutional theorists had practically come to the view that the Supreme Court was prepared to announce that all delegations of legislative power were beyond judicial review—were, perhaps, to be labelled as "political" rather than "justiciable" questions.<sup>10</sup> It was felt, in other words, that the rule against delegation was about to become a dead letter. In 1934, for the first time in our history, the Supreme Court in the so-called "Hot-Oil Case" gave effect to the delegation rule, and held invalid a congressional statute authorizing the President, under certain circumstances, to prohibit the shipment in interstate commerce of oil produced in violation of State law. Other instances of delegation of legislative power have since been held invalid. Today, therefore,

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<sup>10</sup> The court, for example, has held that the constitutional direction in Article IV, section 4, that "The United States shall guarantee to every State in the Union a republican form of government" presents a political question not justiciable in any court.

the rule against improper delegation exists in the case of Federal action as well as in the case of State action.

The Federal rule tends still, however, to be more liberal than the corresponding State rules, although the States differ widely in this respect. In Wisconsin, to cite a single instance, the State Supreme Court, during the last two decades has adopted a realistic view of the delegation issue. In Illinois, as our discussion of this issue above has indicated, the court follows a restrictive interpretation bordering on the absurd. On this problem, as on all problems of statutory and constitutional interpretation, careful draftsmanship will help a great deal. There are limits, however, to the facilitative capacity of draftsmanship. It is necessary that the courts shall apply realistically the rule which they themselves assert: that where the legislature has been as specific in formulating the standard to guide administrative discretion as the circumstances will allow, the administrator may be authorized to fill in details and prescribe subordinate regulations. A realistic sense of the need for administrative flexibility is possessed by many judges and needed by the rest.

#### *Do the Constitutions need Amendment?*

It will be apparent that many of the difficulties here indicated may be solved by the judges themselves, in the trends of their constitutional interpretation. It is open to the people, by constitutional amendment, if the judges fail them, to revise their constitutions and thus, to some extent, to reverse the trends of judicial decision. But . . . it should never be forgotten that the amendments themselves will be interpreted by the judges. Some possible amendments may be briefly considered.

On the subject of the legislative power of Congress, it has been proposed that the Federal Constitution be amended to provide that the Congress shall have power to legislate concerning all matters affecting the social and economic life of the country, with the proviso that the powers of the several States shall remain unimpaired by this grant of power to Congress, and that the operation of State laws shall be suspended only to the extent necessary to give effect to acts of Congress. Because of the danger of restrictive interpretation



of this general language,<sup>11</sup> it has been suggested that such an amendment might be supplemented by provisions expressly authorizing the Congress to regulate mining, agriculture and manufacturing, or to regulate intra-state as well as interstate commerce, or to conserve natural resources, or to own and operate enterprises in the fields of transportation, public utilities and banking, or to prevent and control floods, droughts and soil erosion, or to limit hours of labor, to set minimum wages and to regulate working conditions whether or not in interstate commerce, or by any combination of these provisions or all of them.

Because of the judicial interpretation of the due process clauses of the fifth and fourteenth amendments, it has been suggested that these clauses be redefined so that they shall constitute a limitation only upon judicial, administrative and executive procedure. (Such an amendment would have also expressly to forbid any State to abridge freedom of speech, press, assembly, or religious worship, or to deny the right of one accused of crime to the benefit of counsel. The Congress is now expressly prohibited from such abridgment or denial. The State legislatures are not now expressly so prohibited, but the courts have heretofore derived such prohibition from the due process clause of the fourteenth amendment.)

Another group of suggestions for constitutional amendment has sprung from the recognition of the role of the judiciary in constitutional interpretation. It has been suggested that the Federal Constitution be amended to prevent any court, Federal or State, from declaring invalid any act of Congress. To prevent State legislation from interfering with Federal programs under such an amendment, it would be necessary, further, either (1) to permit courts to declare State laws invalid under the Federal Constitution as at present, but preventing any court from declaring such laws invalid to the extent that they are authorized or ratified by an act of Congress, or (2) to prevent any court from declaring

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<sup>11</sup> When Professor Walton Hale Hamilton was asked recently how he would phrase an amendment to confer upon Congress the power denied it by the court in the *N.R.A.*, *Railroad Pension* and *Bituminous Coal* cases, he suggested the "power to regulate commerce among the several States."

State laws invalid under the Federal Constitution, except to the extent that they conflict with an act of Congress.

Another group of amendments has been suggested, to liberalize the procedure for amending the Federal Constitution. The Constitution may be amended to provide that future amendments proposed by the Congress shall be submitted to the direct vote of the electorate at an election called for the purpose, and shall become effective when approved by a majority of the votes cast at such election. The amendment might require approval by a majority of the votes cast at such election, and by a majority of the votes cast in a majority, or two-thirds, of the States.

It is customary in discussions of this subject to conclude with a ringing cry for an enlightened and public-spirited legal profession. And, the need for judges and lawyers informed as to social processes and sensitive to the needs of a dynamic social and economic order is inescapable. We should not, however, step from this recognition to the conclusion that we need make no other effort than to revise the training received by lawyers and judges. We shall all of us be always in need of more education. Every school of thought numbers among its adherents, however, the learned as well as the uninformed. The acts of lawyers and judges spring less from ignorance than from the dominant philosophy of life of the individual. "Reactionary" judicial decisions may seem to some of us unduly restrictive, but they do no more than restrict action which, in the minds of those who differ with us, ought to be restricted. We each of us seek to influence the course of events, in view of *our* hopes and fears.

What the land-use planner should here make note of, therefore, is the actual distribution of governmental power which prevails in the field of land-use. This distribution includes not only a division between national and State functions, but also one between legislature, executive and judiciary. The social scientist seeking to illuminate and guide social activity must, at his peril, discern correctly the forces which do in fact control events. It is those forces he must learn to guide or control.

# DETERMINATION OF SALES AND LEASE VALUES OF PRIVATE AND PUBLIC RANGE LANDS

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## *Range Land Appraisal*

THE evaluation of grazing lands, whether for loans, for sale, or for lease, involves different theoretical and practical problems than does the appraisal of crop lands. The essential difference between the appraisal of crop and of grazing land is simply that in the latter case the total income to land does not attach specifically to a particular tract of land, and to that tract only.

A farm consists of crop land, and possibly of pasture lands also, which may vary in fertility, suitability for various crops, and in other ways. "Units" of such land may be added to or subtracted from the farm. Such additions or subtractions of "units" of land may involve some reorganization of the farm in order to secure its most efficient operation. A marginal value product can be calculated for the acre of land added or subtracted, and this marginal value product attaches to that acre of land.

The appraisal of a ranch presents the same general problems as does the appraisal of a farm. A ranch is an operating unit containing or controlling the various types of land necessary to provide feed for livestock throughout the year. Some of the land included in the ranch operating unit may be owned by the federal government, and used by the ranch operator under license or permit issued by a Federal agency. Range lands, of different physical characteristics and seasonal usefulness, are some of the component parts of a ranch unit. This paper deals with the evaluation of range lands as separate entities, and not with the appraisal of operating ranches.

The forage produced by grazing land can be grazed by livestock, but it cannot be harvested economically in any other way. In order that livestock can harvest range forage in a particular season, they must be fed or grazed throughout

the year. Except in a few areas, grazing land must be used in connection with crop land, and in many areas more than one type of range land must be used within the same operating unit for livestock production. Rental can be calculated for all classes of land combined in a ranch, by using the same general apparatus as in the appraisal of crop land, but the allocation of this rental to the various classes of land requires some additional procedure.

The marginal productivity analysis cannot be applied to the evaluation of seasonal range lands. An operator can calculate the marginal productivity or value of one "unit" of range livestock, or of all the land necessary to produce forage for this livestock on a year-round basis. One "unit" each of summer, spring-fall, and winter forage is necessary for this marginal "unit" of range livestock. These different seasonal "units" of forage have a combined value which can be determined by the marginal productivity analysis. The value of forage for one season depends very largely upon the cost of forage for other seasons. The marginal productivity approach may fix an alternative use value for crops used for winter feed. With this exception, seasonal forage has no alternative use which does not involve the use of forage during the remaining seasons. When an operator is calculating the value of an additional tract of summer range, he must have available as one factor in his equation the cost of spring-fall and winter forage.

In many parts of the range livestock region three distinct types of range land are found: summer, winter, and spring-fall. Each of these seasonal types has distinctive characteristics of topography, soil, precipitation, plant cover, and water for livestock. Feed produced on crop land may take the place of winter range. In some areas the same type of range can be used for summer and for spring-fall. These various seasonal types of range must be combined into one unit, in order that feed for livestock will be available throughout the year. Each type alone is valueless since its forage cannot be harvested except by livestock that must be fed during the remainder of the year. If all types but one are free, that one can absorb all the rent of the group. The area of range land within a given region which can be used as spring-fall range is not absolutely

fixed, since some lands better adapted to summer range may be used as spring-fall. The extent of such adjustments is distinctly limited. The same progression of the seasons provides snow for stock water on winter range but covers the summer range with a thick blanket of snow, and the coming of warm weather is responsible for forage growth on the higher mountain summer ranges but dries up the stock water on the spring-fall range.

Because of differences in topography, precipitation, and other natural features which characterize seasonal ranges, the year-round operations of range livestock producers may be spread over a considerable area. Livestock migrate or are driven from one seasonal range to another. In order to balance all the seasonal range available into a complete year-round operation, livestock movements frequently involve more than one county.

Appraisal of range lands is a problem in placing a value on productive resources which must be used in an almost fixed combination with other resources. Seasonal ranges are bought, sold, and leased independently of other seasonal ranges, so that a sale or lease value must be agreed upon in some way between buyer and seller. The Federal government owns large acreages of National Forest and public domain lands in the West, most of which are valuable for grazing at one season only. The fixing of grazing fees on such lands involves some estimated division of the total land rental. Business practice in the range livestock region demands that values be fixed on range lands capable of seasonal use only.

The total rent accruing to all types of land used by a ranch might be divided between the different types of land on one of several different bases. If the rental of one type of land is institutionally or contractually fixed, this rent becomes an item of expense, and the residual rental can be divided among the other types of land. In the absence of such institutional or contractual rent, some means must be devised for allocating the total rental to range lands of different types. A logical basis would seem to be the amount of forage produced by each type of range. An area of land which produced feed for 100 cattle for two months would have twice the total value of an area producing feed for 100 cattle for one month. Acre

values would be secured by dividing the total value by the number of acres involved.

Before going into detail as to the use of this method, certain assumptions and consequences should be pointed out. The assumption is that each month's grazing is equally valuable. Some seasonal ranges provide a mere maintenance ration for livestock, while others furnish feed for growth. Although lambs make their growth on the summer range, yet winter sheep range is necessary to carry the breeding flock through the winter, so that there will be some lambs to grow and to sell the next summer. Two physically similar tracts of land may be valued differently. A summer range which has good quality winter and spring-fall range conveniently available should logically be valued at a higher rate than equally good summer range which has only very poor winter and spring-fall ranges. Crop lands of equal productivity vary in value according to location, transportation facilities, and markets.

#### *Data Needed for Range Land Appraisal*

In order to appraise range lands, the following data are needed:

1. Carrying capacity of different seasonal ranges.
2. Rate of feeding livestock.
3. Productivity or turnoff of livestock and livestock products.
4. Cost of operation of the ranch, expressed in physical terms as far as possible.

These data are in addition to information on crop yields, prices of products sold, costs of expense items, interest rates for capitalization of rent, and other items which are necessary for crop land appraisal.

There seems to be a widespread misunderstanding with respect to carrying capacity of range land and its relation to land value. Carrying capacity is the ability of land to furnish feed for livestock, so that they are maintained in good flesh and make normal growth, and with maintenance of soil fertility and vegetative cover including the palatable species. It is ordinarily expressed as the number of acres required to furnish feed for an animal unit for a month, with the un-



fortunate result that the larger numbers stand for lower yields. If all other things are equal, range land value varies in somewhat the same proportion as does carrying capacity. But frequently all other things are not equal. Carrying capacity measures forage production, but does not measure land value because (1) it makes no allowance for the circumstances of forage production on the supplementary range and crop land areas, and (2) it makes no allowance for turn-off or production of livestock and livestock products, and costs of securing such turnoff.

Productivity of livestock, or net production, is the sum of livestock sold, livestock eaten on the farm, and increases in inventory, minus purchases and inventory decreases. It can be expressed in numbers of stock, in weight, or in value. It is a summary figure which gives a more accurate basis of comparison than any one of its component figures. Some ranches buy and sell considerable numbers of stock, which distorts their sale and purchase figures when calculated on a per head basis. The ranch which holds over into the following year most of the year's increase can be accurately compared with the ranch which sells all the increase, if comparisons are on a net production basis, but not if they are on the basis of sales.

Productivity of livestock is influenced by death loss of animals, by calf or lamb crops, by weight per head of animals sold, and by other factors. While in general productivity varies in proportion to carrying capacity, there is by no means a fixed and invariable relation. A range may produce a large amount of forage and yet have low productivity of livestock because of high death loss or low calf or lamb crop. The presence of poisonous plants on a range may cut the turnoff of livestock in half, because of high death losses. Other natural conditions of particular ranges may materially affect livestock productivity. Sales weights of animals of given age usually but not always vary proportionately with carrying capacity, since ranges with higher carrying capacity have feed to produce heavy animals. Even when ranges of high and low carrying capacity are each properly stocked, the greater abundance of feed within short distances on the range of high carrying capacity enables young animals to

put on flesh more rapidly, attain a higher degree of finish, and be fatter than is possible on a range of lower carrying capacity, even though the latter be properly stocked. The same quantity of forage is ordinarily more valuable on a range of high carrying capacity than on a range of low carrying capacity. Calculation of grazing fees or lease values on a per head instead of a per acre basis does not eliminate the differences in value of high carrying capacity ranges, as compared with ranges of low carrying capacity. Browse and brush ranges usually have a relatively higher turnoff of lamb than of beef, while grass types usually have a relatively higher turnoff of beef than of lamb.

Even if range land value invariably varied in the same direction as carrying capacity, it probably does not vary exactly in the same degree. Two acres of poorer range may produce as much forage as one acre of good range, and yet the two acres be less valuable, since the costs of operation for the same number of livestock would usually be greater if spread over a larger area. Just as crop land value increases more than proportionately as yields increase, so do range land values increase more than proportionately as carrying capacity increases.

#### *Budgets the Basis of Range Land Evaluation*

The actual evaluation of sales or lease values of range lands requires the construction of ranch budgets. The problems in connection with the construction of these budgets are those met in any budget or appraisal work, except that special attention must be given to prices for longer periods. Cattle prices, particularly, vary over long periods in cyclical fashion, so that average prices based on a short period may be seriously out of balance with other prices.

In the construction of ranch budgets in order to arrive at the capitalizable land rent, it is preferable to exclude taxes on land from the operating expenses of the ranch, and then deduct them from the land rent. Taxes and interest on livestock should be deducted before the land rental is calculated, since livestock are a readily liquidated form of capital. If the ranch is able to earn interest only on the investment in cattle or sheep, it is difficult to see any considerable value in the

range land. Once the capitalizable land rent is obtained, it is apportioned to the various classes of land on the basis of the months forage produced by each.

An example will serve to illustrate this method and some of the problems in connection with its use.<sup>1</sup> A ranch normally operates 300 head of cattle, growing 316 acres of hay and with 5,000 acres grazing land. Some irrigated pasture is needed for work stock and a milk cow in the summer, and a little grain is raised, but essentially a straight beef outfit is operated. The annual net production of beef, made up of long yearling steers, old cows, and a few heifers, older steers and bulls, is 73,600 pounds, or 245 pounds per head on hand on January 1. The annual costs of operation of this ranch, using estimated long-time average cost rates, and including interest and taxes on items other than land, were \$4,020 including wages to the operator of \$600. The gross income to the ranch was \$4,990 all of which was from sale of beef. Beef, of the ages and classes sold from a ranch of this type, was valued at \$6.75 per 100 pounds, an estimated long-time average or "normal" price. A balance of \$970 is left to pay taxes on land, and to be capitalized into land value.

The sum of \$970 is available on this ranch annually to pay taxes on land, lease charges, interest on money borrowed on land, or income to the owner of the land. In the simple illustration chosen, the cattle run half of the year on the grazing land, and are fed hay or run on hay meadows half of the year. Dividing the \$970 equally between the 5,000 acres of grazing land and the 346 acres of crop land and irrigated pasture (the same type of land), we have a gross rent per acre of \$1.40 for the crop land and \$.097 for the range land. Taxes on the former average \$.90 per acre, leaving \$.50 to capitalize into land values, at 5 per cent interest. On this basis, crop and irrigated pasture land is worth \$10 per acre. Taxes on grazing land average \$.08, leaving \$.017 to capitalize into land value, so that such land has a value of \$.34 per acre. If the total taxes on all classes of land were deducted from the total rent available for all land, the corresponding land values per acre

<sup>1</sup> These data are illustrative only, but approximate the situation found in northwestern Colorado, as shown by Burdick and Clawson in "Economic Considerations Affecting Permit Distribution Policy on Public Range Lands, Yampa River Drainage Colorado," a report made to U. S. Forest Service.

would be \$7.80 for crop land, and \$.54 for grazing land. In the case chosen for illustration, taxes on grazing land absorb a larger part of the income which can be allocated to such land than do taxes on crop land. These values are low on an acre basis, because of the large acreage of land involved. Nearly 20 per cent of the gross farm income was available for payment of taxes on land and for capitalization into land values.

In the above illustration, a 60 per cent calf crop was assumed. On ranges where calf crop was 70 per cent, land values would be approximately doubled, assuming that costs of operation remained the same. Or if the calf crop were only 50 per cent, no income would be available as rent, above the taxes levied on the land, and in fact the operator would have to take a low rate of interest on his investment in livestock, or low wages, or both. Different operators will secure different results on the same ranges, but in a large measure differences in production of livestock are because of the differences in natural conditions on the range. Average management capabilities must be assumed in range, as in crop, land appraisal. Small differences in gross production, unless offset by equal changes in costs of operation, result in big changes in calculated land values per acre.

The illustration given was purposely chosen as an extremely simple one. But the same methodology could be used where several classes of land were used for varying periods during the season. In the northwestern Colorado area, the range available was several times as valuable for sheep as for cattle. Abundant browse furnished feed for early, heavy lambs, and productivity per head of sheep was high. The brushy range, general scarcity of grass, fairly high death losses, and fairly low calf crop all contributed to an only moderate turnoff of beef from the same range. Under different conditions, opposite value relations might easily exist. Accurate data are needed for each expense or income rate, in the same way that accurate data are essential for any appraisal.

#### *Modification of Method*

Two important modifications of the method outlined must be introduced. First, the value allocated to a given type on

range, or the charge made for its use, cannot exceed that of the next best alternative method of operation. When fees are charged for winter sheep grazing on public domain, it may be cheaper to get the same forage in hay or other feeds. Experience in northwestern Colorado would seem to indicate that larger lamb crops and lower death losses of sheep fed on hay in the winter mean that only very low fees can be charged for grazing on public domain in winter. In the same area, irrigated pastures for summer cattle grazing could compete very successfully with the range lands available, offering an alternative method of production. No rancher will be willing to pay more for grazing of one type than necessary to secure an equal amount of forage at the same season in alternative manner. Where alternative methods of operation fix the value of one seasonal type of forage, its value can be included in the total costs of operation, and the residual income considered as rent on other types of range. Situations in which a feasible alternative source of forage exists are not common in the range livestock region.

The second modification concerns variations in location, forage cover, available water supply, or other factors which make one particular tract of range more valuable than another with the same carrying capacity. In the illustration cited, if this rancher could secure a different summer range, (perhaps more conveniently located) which would raise the net productivity of his cattle or lower his costs of operation, he could afford to pay nearly all of this increased net income as additional rent for the new tract of range. The value of crop and range lands being determined on the basis of forage produced under the existing setup, an opportunity to secure a more productive tract of land of any seasonal use could be paid for by the entire increase in income to the whole operating unit. Because of the nature of range livestock operations and physical limitations on the location of range lands that can be used effectively, situations of this sort do not often arise.

*Land Costs in the Past have Deviated  
from Calculated Values*

Costs charged for the use of range lands in the past have not always coincided with the value of the range as calcu-

lated by the method outlined. Divergence between actual and calculated costs has been due to lags in adjustment to changing economic conditions, to the existence of free or low cost public range, and to excessive tax charges.

During the war and until the depression, sheep would support higher land values and costs than would cattle on many range areas of the West. In spite of this fact, much range land continued to be used for cattle. In part this was owing to the natural resistance of ranchers and farmers to change, and to the desire to continue operations as in the past. However, a major factor was that the change in operations would render unnecessary much of the crop land used for hay production. Sheep are generally grazed in the winter on types of range land and under conditions where cattle cannot be. A shift from cattle to sheep would necessitate a change in the use of crop lands as well. Using the range lands for sheep grazing would divorce them from the crop lands, and probably lead to a loss in value of the crop lands. In an effort to protect crop land values ranchers continued to operate cattle, hoping that a return of more favorable prices would support the land values previously existing. Range lands under these circumstances did not earn as much as a budget showing returns under the most efficient setup would have indicated.

Throughout the settlement period of the West and until the passage of the Taylor Grazing Act in 1934, large areas of Federal lands existed for the use of which no charge was made. The rent which would have been allocated to these lands under the procedure herein outlined, accrued to the privately owned lands used in conjunction with the federal lands. Private lands secured the income from a larger area, and were able to support a value in excess of that justified by the forage produced. Private land which enabled an operator to use free public range, and at least partially to exclude others from it, acquired a "control" value. With the initiation of positive control on the National Forests and public domain, grazing fees were charged. In general, these have been below the value of the forage produced, and hence private lands necessary to secure their use have had a measure of "control" value. It should be obvious that the difference between grazing fees on public lands and lease values on pri-



vate lands does not measure the amount by which public land fees fall short of the value of the forage produced. Lease values or ownership costs on private land are directly dependent upon fees charged for public land grazing.

Taxes on range land in many areas have equalled or exceeded the value of the forage produced. This over-appraisal has been due to an effort to make the public ranges pay taxes indirectly, to a common over-estimation of the value of poor land, and to the belief that some range land offered possibilities for grain production. Taxes in excess of the value of the forage produced can be paid if free or low cost public range is secured or if a speculative value on the land induces its owner to expend money in excess of his income from the land. Either of these situations contains a large degree of instability.

### *Conclusion*

The purpose of this paper has been to suggest a method of evaluating range lands, without going into details as to how it should be applied. It should be emphasized that it is not possible to avoid a considerable degree of arbitrariness in evaluating a productive factor that must be used in fixed proportions with other factors. If the proportions of factors cannot be varied, the marginal productivity of any one factor cannot be determined. In actual sales the bargaining power and competitive strength of the buyer and seller are almost certain to be the factors which determine the sale price of a specific tract of range land. A person who owns a tract of range suitable for seasonal use only, without capital to purchase other land to make up an effective operating unit, and with no desire to engage in the ranching business, is ordinarily in a weak position to bargain with an established rancher; but if the latter is for some reason forced to acquire control of more range within a reasonable distance of the home ranch, he may have to pay a price for the same tract of land far in excess of the value of the forage produced.

## HILLVILLE: A HAVEN OF REFUGE<sup>1</sup>

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**A**merican rural life consists of at least two types of economies, the one producing for the market (the business man) and the other for a living (the yeoman). Many sub-types exist but these two are outstanding. Of late, interest in the yeoman type is reviving.<sup>2</sup> Among the American yeomen many types of cultures exist. This paper is a case study of a psychological type found not infrequently in all communities but especially prevalent in yeoman communities near the great industrial centers. How much of our population consists of people like these is not known; probably at the present they are increasing. While few contentions or morals are drawn from this study, possibly it is not out of the way to suggest that "social action" concerning the yeoman type of rural resident will oftentimes get unanticipated results if the underlying psychological factors are not taken into consideration.

The emerging theme of this community after 135 years of development is that of a physical and psychological Haven of Refuge. Due primarily to its isolated location on bleak hill-tops, it was not permanently settled until after the American Revolution, although earlier residents had consisted of deserters from Burgoyne's army. Its population increased to more than 500 during the first half of the last century. At the time of the Civil War, the construction of a tunnel under the entire length of the town brought a great influx of immigrant laborers which nearly tripled the population by 1875 and all but annihilated the early Yankee strain. After the departure of the construction labor group between 1875 and 1880, a somewhat different type of population remained, and during

<sup>1</sup> For aid in this study, the author is indebted to Howard Meyers and T. J. Woofter, Jr. of the Research Unit of the Works Progress Administration.

<sup>2</sup> Due in part to many circumstances but principally to the activities of the Advisory Committee on Social and Economic Research in Agriculture of the Social Science Research Council. See *JOURNAL OF FARM ECONOMICS*, August 1937, p. 836. As a matter of fact this yeoman-capitalist differentiation of farm economy is at the root of much of the modern real struggle in agriculture. See John B. Holt and Marie Jasny, "Changes in German Rural Life," *Journal of Rural Sociology*, September 1937, p. 266 ff. and the works by Joseph Davis and H. I. Richards on the A.A.A., Brookings Institute publications.

the next years the community was thought of as a farming town. However, with the building of a large utility in 1912, tax revenues were so increased that many of the members of the community found little economic need of further farming, and recently have abandoned private employment—in many cases even part-time farming and kitchen gardening—in favor of a relatively parasitic existence from the town's large tax revenue.

Of the present population of almost 400, living in small dwellings and shacks scattered through the town, a few subsist on farm garden products and on the wages of the tunnel and the utility companies; but most rely on town employment or work-relief almost to the total exclusion of any other income. The town government has distributed the assessment of taxes in such a way that more than 90 per cent falls on out-of-town persons, and the large proceeds revert, in general, to the families which have voted the policy into effect. As a result, the depression has scarcely touched the community. While other truly agricultural towns may have been forced to resort to outside aid from the state and the federal governments, Hillville distinguished itself for a time by merely accepting what came along. Not only has it proved a self-sufficing haven of refuge with its resourceful objects of taxation solidly entrenched within the town, but the town government has consistently and without difficulty closed its fiscal years without debt and usually with a large cash balance.

This situation, associated with low costs of living, availability of cheap land, inexpensive standards in housing, and the isolation of the region, made the community the sort of a place to which nearby industrial workers, those unemployed, those not seeking employment, those tired of mill employment and city life, and others not highly motivated in an economic sense, could fly to an easy and rather secure existence. The people of the community are widely scattered and seldom gather together; individual families pass unnoticed; new families come to the town unobserved, for the community is not concerned with the individual family; rather, the family is expected to claim what it wants from the community. The birthrate is unusually high, and the pro-

portion of adults who are married is equally above the general level. This situation was ideal for families not physically degenerate but simply unmotivated, where each could mind its own business, do as it pleased, and find security with just enough effort to make life rounded and interesting.

Excepting its once valuable timber, the town's only significant natural asset is its water power, harnessed in 1912, and now the mainstay of the economy. In times past the scenic beauty of the region attracted summer hotels, but these have long since been abandoned, and there is at present no great demand for sites for summer homes or camps. A ridge of mountains forms a natural divide between the industrialized valleys to the east and the west, and almost since the time of the first settlement the town has played host to highway traffic passing across the state, with hostels and turnpike fees. The modern state highway, which follows the old turnpike route, is fringed with commercial stands, shelters, and observation towers on eminences. Much of the town, especially in the north part, is still in a wild state and in the open season deer hunting attracts townspeople and outsiders alike.

### *Population*

The first permanent settlers of record came in 1783 and were followed within 12 years by five other families. After 1795, growth of the community was extremely rapid for 15 years, then steady until 1860. When the town was incorporated in 1805, it had about 300 inhabitants; in 1810 the population was 392; in 1840, 441; in 1860, 645. Up to about 1810 or 1815 most of the settlers were Yankee migrants from neighboring states, as well as from the southwestern part of this state, and represented a phase of the general northward migration up the river valleys of this region. But the growth of the town after 1815 consisted primarily of natural increase, and small immigration from nearby communities.

Between 1860 and 1865 work on the tunnel was active, with a resulting tide of foreign labor into Hillville, the largest part of which was Irish. In the five years after 1860, the population increased by more than 500 to 1,173 in 1865 and to 1,322 in 1870. Most of the laboring group were housed in temporary structures of a barracks type, although a number

of the new families built homes with the intention of remaining in the community.

The building of the tunnel and the introduction of the large foreign element marked a sharp turning point in the character of the permanent population. Within ten years after completion of the construction all but one of the names of the six original settler-families disappeared, and descendants of the sixth moved away shortly after. Insofar as names may be used as a guide, three-quarters or more of the Yankee families of 1840 had left the town, or perhaps in a few cases had died out, by 1880.

The population since the Civil War has been characterized by considerable mobility, emigration of a large number of the foreigners of the boom years, the appearance of a new type of American-English population, and a consistently high rate of natural increase. The typical family of today comes from the city, or at some time has lived in the city. Hearing of Hillville through friends or through regional reputation as an exceptionally inexpensive place in which to live, with employment by the town to fall back on and consequently no need of settlement for direct aid, families lacking city employment moved there and of necessity remained because no job could be found elsewhere. For the past 40 years or more the community has tended to become a haven for such former industrial families. Not more than eight or ten farm families have lived here throughout this recent period, and it is interesting to find that the present population is not only native born of native parents but consists in large part of families of native American ancestry. In 1934, for example, of 102 families, at least 76 bore English names.

At no period since 1880 has the rate of natural increase been as high as in the 14 years following 1920. This is partly because conditions have tended to leave the proportion of old persons low, but the birth rate itself has been high as contrasted with practically any community in the state. Since 1900 births per 1,000 population per year have numbered from 21 to 35. Even in 1934 there were children at the rate of 501 under five years of age per 1,000 women aged 15 to 44, a rate which is seldom matched in the northeastern part of the country.

Marriage between residents is more common here than in the average rural town of this size. For example, since 1925 slightly more than two-thirds of the townspeople who married chose other townspeople. Where marriage with outsiders occurred, in three cases out of five, it has been with residents of nearby small industrial cities. The proportion of adult women who married is high, being in 1934, 77 per cent of all women over 15 years of age. Among men the proportion who are married is a great deal lower, since there is a high excess of males in the population (226 males to 168 females), a number of men living alone.

In many respects, then, knowledge of the people in this community points to a particular economic and social type of individual and family. The population represents not the residue of a selective emigration, since emigration of the earlier stock was complete before the end of the nineteenth century, but rather the results (from the economic point of view) of a negative selection of industrial population—a selective immigration. These former industrial workers are not degenerate, but rather are the kind who want to give up the struggle of the mills and to take life easy in a simpler, partly familistic environment. They seem to choose smaller incomes with security and peace in preference to larger incomes and the more debilitating life of nearby industrialized regions.

### *Making a Living*

Throughout the early period, from 1783 until shortly before the Civil War, farming was the primary occupation of nearly every family. Saw mills and grist mills were prevalent, usually operated on the side by farmers. Lumbering reached a peak toward the end of the period, and represented the only large development of mechanical industries. In 1855 the town boasted 14 saw mills whose annual production ranged from 20,000 to 100,000 feet to the mill. In 1829, and again in 1855, descriptions say that there were no "merchant stores" in town. Summer crops are frequently referred to, and presumably filled household requirements. Grain had a slim chance between the late and the early frosts, but pastures were good and the hay crop must have been adequate, since livestock were wintered in the town. One may suppose that these early families provided for most of their own needs, purchasing



what little they could not supply for themselves in South York, five miles away in the valley to the west.

The construction of the tunnel did not immediately take the early families from the land, for the local market for farm produce was greatly increased by the new laboring population, and summer crops were emphasized while stock raising and wool growing were somewhat neglected. The number of cows dropped from 310 in 1860 to 234 in 1870, and the number of sheep in these same years fell from 502 to 362. The Yankees did not in many cases join the imported labor in construction work, but usually remained on their farms until they left the community in the decades following 1880.

In the course of construction work on the tunnel a large building was erected for condensers. When work was completed this building was taken over by local men to be used as a pulp mill, which prospered for at least 20 years. In 1885 it was said that 24 men were regularly employed in the plant. The railroad company, as the new tunnel was used, also gave non-farm employment to as many as 40 men on its section crews and has continued to be a source of income for townspeople, although of steadily declining importance.

As the pulp mill ceased operating and the railroad employed a decreasing number of persons, and as there was a great decline in farming, it becomes clear that newcomers to the town could not have taken up farming to any extent, but rather were supported first by mechanical industries and later by the town.

How does the community support itself today? There are, nominally, 22 farm families, that is, 22 whose male heads give farming as their normal occupations. However, of the 22 "farms" only one is operated on a commercial scale fully adequate to support a family commercially, being run by the family head and three hired men. Two members of each of three other families regard themselves as farmers, but these as well as the remaining 18 carry on, at most, only part-time farming and expect to win nearly all of their cash income by highway labor or similar town work. Most of the so-called farms are survivors of the paying enterprises of two generations ago, and only small pieces of land are now kept cleared for pasturage and crops.

The utility employs 19 persons, ten residents of Hillville

and nine from neighboring communities. Nearly all of the townspeople employed have been with the concern for at least ten years. They live in the tunnel section of the town, in the valley east of the ridge, most of them in company-owned dwellings, and, with an average wage of \$30 a week, are able to live what Hillville considers "prosperous" lives. The utility, branch of a large corporation, has been operated at constant capacity for many years and provides the most steady employment that Hillville has ever known.

The railroad has dropped two-thirds of its war-time employees and now gives work on its section crew to only seven Hillvillites, at least five of them Italians. The families of most of these railroad workers also live at the tunnel. They received \$9 per week for a three-day week in 1936, and most of them drew on town employment for further income.

The retail trade of the community consists to a great extent of highway business. Bordering the state road are 31 overnight cabins with five different owners, seven stores (one of which does nearly half of all of the business), eight filling stations, an inn, a large hotel, four lunch-stands, tea rooms and the like, a garage, and two observation towers, both on highest points of the "trail." Roughly, half the number of enterprises are owned by Hillville families, including the biggest store; but by far the largest establishment on the highway's commanding site is owned by a "corporation" in South York. This type of trade is a seasonal one which in spring, summer, and fall gives employment to 18 or 20 townspeople. For three or four months of the winter it comes to a complete standstill with the exception of two stores and a filling station which cater to local needs the year 'round. While about twelve families of the tourist-serving group are outsiders in the sense that they do not participate in or lean on the town government, they are distinct in that all are recent comers to Hillville who built homes as well as road-stands with the sole intention of exploiting the highway market. Several of them have winter homes in South York or other valley towns. Members of only two of the 12 families have been known in any recent year to draw on town employment for supplementary income.

Finally, a half-dozen less independent resident families

have steady incomes from several private sources, including stores and factories in South York and, on a different order, the Post Office Department through the two Hillville post offices. Four members of these families work for the town from time to time, including the postmasters, and two others receive straight aid for age and for veteran's qualifications.

Statistics for the year 1934 show that for the remainder of its income the community relies almost wholly on the utility taxes. In that year the town collected approximately \$40,000, 92 per cent of it from out-of-town property owners, and over 80 per cent from the utility alone. More than a quarter of this amount was spent for materials, supplies for schools, rental of road equipment, and so on. But the balance of \$28,203 went for wages and salaries, and \$22,955 of this sum was paid to townspeople. There were 102 families in the community, 86 of which, through one or more members, received town money, an average of \$374 per family. Since several had substantial incomes from other sources, as has been shown, and received negligible amounts from the town, the average is greatly increased when these are not included. Thus, the 50 families who received the largest sums for town work averaged \$410, part of which returned to the town in the form of taxes. In 1934 these same 86 families paid to the town \$3,032, thus reducing their total net income from the town to about \$20,000 for the year. On the other hand, during the year 44 of the families received \$3,600 from the federal government for work relief in the town and for CCC employment, an amount which more than covered their combined tax bill.

A family income of this type of between \$300 and \$500 appears unduly small until it is recalled that a number of families raise kitchen crops and keep a cow or poultry, and further, that the typical Hillville family lives on an inexpensive standard. In discussing the population it was shown that the families bearing English names have become steadily more dominant. They account in great part for the very high birth rate and are, on the average, larger than the families of foreign names. In general, they suggest less economic motivation of the accepted American type than families of other stock, and the proportion having private employment is much lower than that of Italians, Irish, Germans, and other

nationalities having private work. Correspondingly, the American-English group, with three-quarters of the population, receives almost seven-eighths of the wages and salaries paid by the town and nearly as large a share of federal money.

The great dependence of the community on this type of income cannot in itself be regarded as an indication of non-economic motivation, but the unsteady habits of the working group (perhaps the same traits which left many of the families stranded as the scatterings and outcasts of industrialized areas) do point to such a lack. According to officials, many men, particularly those from the "Hill" section (the plateau area which includes the town's poorest farms) who are hired for road work for two weeks, quit before a week has passed, seemingly satisfied with the wages of a few days and offering some excuse or complaining of too-hard work. In the autumn of 1935 an applicant for welfare acknowledged to the administrator that he had not taken the trouble to put in any crops in the spring. The administrator advised him to be sure to put in a garden the next spring and with that granted relief. It was found that the man forgot the recommendation. During 1934, 49 men took work on federal road projects. Less than a quarter of them worked for more than two months; the average man earned \$62 at intervals through the year, and 15 of the 49 worked for two weeks or less. The small yearly income and the inexpensive standard of living of this population are partly the consequences and partly the causes of its shiftless traits.

### *Property*

In almost every case the grants of land which form the present area of Hillville were made to settlers and early inhabitants rather than to prospectors who had no interest in the land other than exploitation. Throughout the 75 years of growth and agricultural development, or up to about 1860, there was little tendency for land to leave the hands of townspeople. The soil has not been abused and in most parts of the town it has been used to a greater extent for pasturage than for crops.

The building of the tunnel, although it involved the purchase of small holdings, did not affect directly either the uses

or the ownership of land, but the rapid turnover of population and elimination of the agricultural-minded Yankees which it precipitated brought about several fundamental changes in land use and correspondingly in property ownership. Several farms were abandoned not to be used again as farms, passing in many cases to out-of-town owners. Large areas of timberland were purchased by city interests, especially in connection with the production of pulp during the last third of the century. By 1910, outsiders owned nearly half of the land of the town, and were assessed for three-fifths of the total tax as against only ten per cent in 1861. At this time the tendency of the new population to turn away from farming and to count on town employment had become quite noticeable, but in no way compared with the extreme situation of today.

Between 1910 and the present, Hillvillites have continued to dispose of land and to use dwellings more and more as mere living quarters. Furthermore, during this quarter of a century out-of-town owners have sold a third of their holdings to the State. In 1935, 5,812 acres were owned by residents, 4,308 by non-residents and 4,180 by the state as compared with 7,332 by residents and 6,684 by non-residents in 1910.

It is the policy of the State to purchase only timberland, woodland and sub-marginal farm land at not more than \$5 an acre, as it is placed on the market unsolicited by state agents. The State now owns 29 per cent of the town's land area. Several former farms have been included in these purchases and the farm buildings allowed to stand unused. Townspeople, forgetful of their agricultural weaknesses, decry this practice and maintain that the purchased farms are in many cases not sub-marginal in their potentialities and should be restored to private owners; they refer to the loss of taxes to the town, in comparison with what might be the case should the farms be operated again.

From the standpoint of economic utility of property, these changes in ownership are of little consequence except as they continue to reduce the already small tax burden of residents. Property today is an economic asset and a source of income to the community, not for what it can be made to produce in

services or goods, but primarily as it is owned by outsiders and remains taxable. The building of the utility in 1912 furnished an object of taxation which dwarfed all earlier ones except possibly the railroad, which previously had supplied nearly a quarter of the tax revenue. The enormous increase in the value of the community which the appearance of the new industry brought about and the resulting violent reapportionment of property and taxability between townspeople and outsiders are evident in the figures which follow:

Year	Value of Resident-owned Property	Value of Non-resident-owned Property	Rate of Taxation per \$1000 of value
1907	\$ 79,030	\$ 92,865	\$23.00
1919	86,754	1,012,243	12.40
1930	118,359	1,316,397	23.20
1934	110,401	1,299,096	22.80

It would be wholly incorrect to say that the use which Hillville had made of its property has been a premeditated plan of action. The community happened, rather than set out, to have its particular type of livelihood. Most small communities, where possible, use the property tax system to exploit the outsider, at least to some degree. It is not, then, the fact that Hillville was quick to capitalize on the outside landowner, on the railroad company, and on the utility, which interests us; this should be expected. The primary interest lies in observing the effect of a simplified and then softened way of making a living on the population and life of this refugee community.

In 1934, 11 of the town's 102 families lived rent-free in un-owned homes, while 25 lived in rented dwellings, for rents ranging from \$2 to \$16.50 per month and averaging \$7.80. Thus, 36 families or slightly more than a third had no property interest or tax concern excepting a small amount of personal property. These families accounted for 48 of the 84 men paying only poll taxes, the remaining 36 being members of property-owning families. Correspondingly, almost two-thirds of the families, with 61 per cent of the population of voting age, owned their homes and had personal stakes to guard in their concerns with local government. It is true that these stakes were low; the median value of property owned



by individual families at that time was \$1,610 and only four families owned more than \$4,000 of real and personal property. Nevertheless, the propertied majority have undoubtedly been influential in preserving a more cautious policy of taxation than might have been the case. The tax rate has continued to be one of the lowest in the state; the assessed value of resident property has been increased slightly, although it might unobtrusively have been kept at its level of 20 years ago; property owners are rarely exempted from taxes.

### *Relief and Depressions*

During the early period of stock raising and subsistence agriculture the extent of public aid did not vary greatly from one year to another, and stood at a general level of 10 to 15 families receiving a little help each year.

At the time of the tunnel construction, from 1865 until about 1873, there was practically no relief, and from then until the present depression the amount of town welfare aid, though characterized by many ups and downs, has nevertheless continued to be sparing. In 1930 there were only seven direct relief cases, and during the year 1934 there were but 16 welfare cases who received more than \$100 each, although 58 persons were given small amounts. In the three years 1932-1934, when depression was deepest outside Hillville, the town allotted to welfare an average of 9 per cent of its regular appropriations, a per capita allotment only slightly above those of other towns of the same size.

How is one to account for the small proportions of public aid throughout the long period since the Civil War, and more especially since 1930? In the first place, although the scale of farming steadily declined throughout the longer period, it has been only during the past five years or less that kitchen gardens and local subsistence activities have been forsaken to any great extent. In the second place, the fact that direct aid has been largely confined to unemployables indicates that neither dependence on a parasitic type of income nor increasingly degenerate social standards have been sufficient to break down the stigma of public support. It is quite significant that the lack of motivation described, although it embraces nearly all angles of individual conduct and group

relations, still has not led to an indiscriminate receptiveness of parasitic dependence. It may be, however, that an overt parasitism will shortly result from present conditions and that the recent decline in kitchen gardening is one indication of such a turn of affairs.

Hillville has not undergone an economic depression for many years, if ever. The aggregate income of all members of the community was certainly greater in 1934 and 1935 than in 1929, a 16 per cent increase in government revenue, not including federal funds, having much more than neutralized the loss of income from the railroad, from the scattered out-of-town employment, and from the further abandonment of agriculture. But, without a local depression, the state and federal government relief measures, together with the changed attitudes toward relief which may be found in so many communities outside Hillville, have clearly influenced this one toward a more complete acceptance of outside support. Until six years ago the town was quite self-sustaining; with few exceptions employment was local; there was no federal income; taxes, in a sense, were local; and revenue from the State, during the twenties, seldom reached \$8,000. But the earlier assumption of self-sufficiency has crumbled today and state and federal social service agents are fully accepted, if not welcomed, by many families. Even the town government has weakened to the extent of permitting federal agencies, such as the CCC to repair town roads, which, always in the past, have been maintained by the local government. State appropriations range from \$10,000 to \$12,000; federal projects two years ago gave work to 49 persons, although only seven men were in federal employ in 1936. Both state and federal contributions are superfluous in view of the fact that the bulk of this income is merely added to an already inordinately large town income from taxes, which alone is adequate to guarantee smooth roads, ideal snow removal, perfect repair of public buildings, and, in short, the highest excellence of government service.

It is significant that the parasitic mechanism of taxation and town employment went for years unaccompanied by the companionate mechanism of direct aid and outside support, but the recent change of attitude must also be stressed.

*Public Life*

The local government is characterized in many respects by extremes. With but one or two exceptions (cf. *Littleville* in *Rural Sociology*, March, 1936) the per capita costs are higher than in any other city or town in the state. In 1900 it was \$9 per capita; in 1930, \$105; and in 1934, \$91. The increase would be even greater if the extraordinary expenses, special appropriations, state grants and the like, were included. Before the increase had reached large proportions, or during the last century and until about 1910, the town money was appropriated to the various departments of government in proportions similar to those in the average or typical rural farming community. By 1932 Hillville's government (from the outer point of view) has become most of all a highway construction and maintenance enterprise; between 1932 and 1934, 52.6 per cent of government expenditures went to pay highway costs, 29.4 per cent to the support of schools, 9 per cent to charities, and 9 per cent to cover all other government expenses. While a few other agricultural communities in the state allot an equal proportion of their expenditures to highways, they in no case compare with Hillville on a per capita basis, where approximately \$200 per family is spent on roads, although the average family among the home-owning group pays a town tax of only \$51.

It must be recalled that the present population of Hillville largely represents a peculiar element selected from large town and city populations, and the administration of a government and the assumption of responsibility, were novel undertakings at the start. In the 10 years from 1886 to 1895, approximately half of all important town offices were held by persons with five family names. Persons of these same names held only 5.3 per cent of the same important offices between 1926 and 1935, while four new ones unrepresented in the town in 1895 accounted for 55 per cent of the offices.

Hillville's greatest claim to political distinction lies in its social division into two geographical sections. The "Central Shaft Section," and the "North Section," together comprising the poor farming area on the mountain ridge, have, at least since the early Yankee population left the community, been classed apart from the lower-lying southern part and

the valley center to the east which comprise the "Transportation Section," and the "Johnson Section," and "Wilson's Section." Although there was ill-feeling between partisans of these two areas for many years, which made itself felt in tumultuous town meetings, a complete break did not occur until 1922.

The community's five schools are handsomely supported with the large revenues of the town, but are not well attended. In 1933-34 the enrollment covered over 90 per cent of the children shown by the school census, but the State Census of that year revealed at least three or four other children not accounted for by the town. In his annual report for 1935, the school superintendent writes, "The results of the tests (Stanford Achievement Tests) given last June indicate that the work of our schools is up where we want it to be and is higher than the average for the country as a whole." From this and from similar observations of townspeople, one infers that Hillville accepts averages as educational standards for its schools. This may be contrasted with the school building standards paid for out of the well filled community chest of tax money.

Law enforcement in Hillville is more concerned with highway traffic violations than with the upholding of by-laws concerning individual conduct and morals and the many irregularities with which it is rife, go unnoticed. Once more it is difficult to escape the impression that these people are an economically unmotivated group and that this social condition is closely allied with a parasitic economy. Thus, to repeat, it is a sort of physical and psychological haven of refuge for many former mill families, tired of too great participation in the relentless and often un motivating character of the struggle for a living on a more conventional basis.

### *Conclusions*

In addition to its "economic environment", relative physical isolation is one outstanding fact in this community, permitting the people to go their own way largely unnoticed. As a result, atypical action can and has developed without stirring up any great amount of outside public opinion. Within the community, chief reliance for the settlement of

"problems" is placed in private hands. Of course, the outstanding exception is the spending of tax funds. What collective justice exists merely rises on account of outraged individual justice. Since the family groups are fairly strong, most affairs are settled within them, affairs between them coming to public attention only when private injustices are felt to have been brought about. The tax money is spent on the assumption that all those who need it can get something, but of course the more popular or more aggressive individuals secure the most.

"Public" opinion in the town is thus chiefly one of *laissez faire*. Family opinion is very well developed and settles most of the issues of life. Opinion between families other than concerning the expenditure of town funds is negligible. That is the reason why individuals can do largely as they please in the town as long as they do not stir up private feelings.

The isolated condition of the village is aided in its influence upon the community by the fact that large industrial populations are located nearby. These industries always grind out, among other things, some population which is wearied with the struggle for livelihood. In most communities this wearied population congregates in a cheap-rent section of the town and continues to live on a low standard with the aid of public relief. In the Hillville region, however, they have moved out to the country districts because this is the environment where living is cheapest. Housing standards are not high. Most of the materials are found on the farms. Fuel can be cut. Living is not difficult.

Even if there were no large tax revenue for Hillville from the utility and the outside property holders, conditions there would be similar to what they are now. The people would work a little harder and would have less money to spend. They would eat more products raised from their farms and would buy less. Few of them would have automobiles. The aristocracy of the town would be the persons employed at wages, since they would be the only ones with fairly high incomes and the only ones possessing automobiles to any great extent. Consequently, the aristocratic portions would bear more prestige with the remainder of the population, and, in the long run, would set social standards for the com-

munity of a somewhat more "economical" type than those there at present. On the other hand, the laborers recruited from the mill villages would have to work harder tending their farms in order to have a living. But out of such a general environment a new work psychology would be created which would constantly purify the mores of the people. The town would thus be somewhat of a convalescent hospital where weary members of the industrial populations would get back a fresh psychological basis for the competitive economic life. If there were no easy tax fund in the community, the psychology of the people would be coming back constantly toward that more rigid type existing among the farming people in Hillville in the period between 1783 and the Civil War.

But with fairly large sums from tax sources available for most of the families in the community it seems more or less inevitable that the region will continue as it is. If those funds were made available in a community which already had strong economic mores they would be used to embellish the standards of living of the community. The farms would still be tilled, kitchen gardens cultivated, hay fields cleared, and most of the living would be produced at home. Extra money for working for the town would be spent in new houses, new furniture, college educations, and what is considered traditionally in America as an "improved" standard of living. However, as it is now, the tax funds have been used largely as a substitute for income from agriculture and other work, the people who work for the town largely tending to substitute these earnings for lessened earnings from their farms. This trend has been extended by the introduction of state and federal money. Real incomes are not appreciably higher than they would be without these aids. The only immediate difference which the income from the town, state and federal governments has made in the community, is that these, rather than the agriculture, are sources of an inexpensive livelihood. Of course, in the long run, the psychological result of the "easy money" will be to keep Hillville as a *Haven of Refuge* rather than as a filter or a recreating rural environment.



## NOTES

### NOTES ON THE CENSUS OF AGRICULTURE<sup>1</sup>

#### I. METHODS IN SAMPLE CENSUS RESEARCH

The research in sample census methods is being carried on under the joint auspices of the Central Statistical Board, the Bureau of the Census, the Bureau of Agricultural Economics, the Iowa and Kansas Agricultural Experiment Stations, and the Secretary of the American Statistical Association. It is expected that a preliminary report on this research will be made next summer.

##### *The Problem*

When the Department's Agricultural Census Schedule Committee asked for suggested questions for inclusion in the 1939-40 Federal Census Schedule, some six hundred items were forthcoming from the staff of the Department alone. The actual number that can be included on any Federal Census Agricultural Schedule is limited to probably not more than 200. There is the sad experience with a longer schedule, such as was used in 1930. The shorter 100-item schedules of 1925 and 1935 gave more nearly accurate and complete results.

There is no doubt a much greater need for statistics concerning agriculture today than was the case ten or fifteen years ago. In the Bureau of Agricultural Economics we are in urgent need of a more comprehensive coverage for the commercial fruit, vegetable and speciality crops for use as periodic "bench marks" in making annual estimates and current forecasts. The railroad carlot shipment data for these specialty crops have been rendered almost useless for this purpose by the increasing proportion of shipments by auto truck, for which no records are available. To benefit agriculture, millions of dollars are being spent and loaned annually by State and Federal agencies without adequate agricultural statistics for proper administration.

What is to be done to meet this demand for agricultural data of increased scope, greater geographic detail and higher degree of accuracy? There appear to be three alternatives:

<sup>1</sup> These notes cover a "Round Table Discussion" held at Atlantic City, December 29, 1937 under the leadership of Professor M. R. Benedict of the University of California who assembled these notes.

1. Do no more than is being done now; that is, allow each agency needing data to make special surveys or proceed without needed data for efficient administration.
2. Obtain greatly increased appropriations that would permit a census of agriculture every two or three years.
3. Apply the principles of sampling and estimation from sample data—a program that would call for a comparatively small increase in appropriations, perhaps two or three million dollars a year. This alternative appears most feasible.

### *The Research*

The object of this research is to determine the most efficient and practical method or methods of taking a sample census of American agriculture in the different sections of the United States that would enable the Government to expand the scope, obtain greater geographic detail, and improve the accuracy of agricultural statistical data.

The research to date has been along two different lines—first, to determine comparative administrative costs of alternative methods, and, second, to determine the statistical reliability and accuracy of alternative methods, including the type of stratification and sampling unit to be used, the size of sample necessary, and the precision of results.

### *Administrative Costs*

A study is being made of the cost per schedule and per item of taking the long 1930 Federal Census Schedule and the short 1935 Schedule. A similar study is being made of the annual State farm censuses taken by the local assessors. Furthermore, in Alabama, where an annual sample census including only a small percentage of the farms in each county has been taken since 1927, four different methods of sampling were tried out in October 1937 to determine comparative costs. This test will be repeated in 1938, when an attempt will be made to obtain the same farms as were taken in 1937. The four methods of sampling used were:

1. A route sample, with the number of farms an enumerator could take in one day as the sampling unit.
2. A section sample, with the number of farms having their farmsteads within a section of land the sampling unit.

3. A section sample, with the land falling within the boundaries of a section forming the sampling unit, and with livestock taken for each farmer interviewed.
4. The individual farm sample—the individual farm selected from local assessor's tax rolls.

With all four methods, the sampling units were selected according to the principles of stratified random selection. Our hypothesis is that the first method, the route sample, will have the least cost per farm and that the individual farm sample will cost the most per farm. We are interested in knowing how much more expensive.

#### *Design of Sampling and Statistical Reliability*

A study is nearly completed to determine the usefulness of the minor civil division or township as a sampling unit. Our tentative conclusion is that a sample unit as large as a minor civil division is not practical for sampling a county where county estimates are the goal. The minor civil division, however, might be used as a base for district or area estimates of items generally distributed among farms, where such areas include ten or fifteen counties, provided a sample of at least 25 per cent could be obtained. Such a sample would necessarily be taken in the same minor civil divisions each year.

A study is under way in some fifteen to twenty counties distributed at least two counties to the State, in Indiana, Wisconsin, Minnesota, Iowa, Kansas and North Carolina (states having annual assessor's census), to determine:

1. The statistical accuracy of a stratified random sample of farms falling within 4-section blocks as compared with a route sample of an equivalent number of farms selected by judgment of the statistician, using soil maps and other information.
2. The comparative statistical efficiency of three different sizes of sampling units stratified by townships and randomized. These units are:
  - (a) Farms having farmsteads falling within 4-section blocks;
  - (b) Farms having farmsteads falling in blocks of four separate single sections;
  - (c) An equivalent number of individual farms.

A study is under way, using 1935 Federal Census data for Morrow County, Ohio, where complete farm identification was made to determine the possibility of stratifying farms, first, along the main highways, second, about centers of population, and, third, along less important highways or byways. The third category has been further subdivided on the basis of the soil-type index. The comparative efficiency of the different sized sampling units is also being tested—single farm; two farms together; 4, 8, and 16 farms, in a string or adjacent, as sampling units.

A study is under way to determine the best way of using Agricultural Adjustment Administration data as a basis for county estimates, which includes the problem of sampling the nonparticipating farms.

This brief statement furnishes some idea of the problems on which the researchers on sample census methods are attempting to throw some light. If legislation is enacted providing for a partial or sample census in intercensal years, the results of this research will permit a much more intelligent and efficient attack on the practical problem of obtaining sample data that can be used as a means of increasing the scope, obtaining greater geographic detail, and improving the accuracy of agricultural data.

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## II. A TECHNIQUE FOR REGIONALIZATION OF AGRICULTURAL CENSUS SCHEDULES

One method of increasing the efficiency of the census of agriculture is to adapt the schedule to the geographical location of agricultural pursuits. This process we term "regionalization." It may be effected either (1) by devoting part of the main schedule to questions unique to certain areas, or (2) by using supplemental schedules to which certain subjects (such as irrigation) are relegated, such schedules being used only in certain areas, or (3) by some combination of the two. A single set of questions may be printed on a single schedule for use throughout the United States. Obviously those questions will have been chosen through a process of elimination. Of necessity, some of the questions so chosen will apply to only a section of the country where the crop or other subject matter concerned is highly concentrated. For the remainder of the country that portion of the schedule will be inoperative. As

the competition for space on the census schedule has become more intense, the waste of space entailed by inoperative questions has become more conspicuous. This problem was attacked by the Census as early as 1880. A special schedule for plantations was used in 1910 but not subsequently; five supplemental schedules were used in 1930 but none were used in 1925 or 1935.

This note gives a simple technique for selecting those questions and geographical areas for which regionalized schedules or parts of schedules will have the highest degree of operativeness. The technique will be useful whether it is applied to complete enumerations or is used in conjunction with a method of selecting the states in which enumeration will virtually yield totals for the United States.

The items arbitrarily chosen for analysis are those shown in table 1 and the farm values which were reported by the Department of Agriculture.<sup>1</sup> Two tests were made to select the states in which enumeration of farm value for these items was necessary in order to approximate totals for the United States. For each item states were assigned if its farm value in that state represented one-tenth of one per cent or more of the total farm value for that item for the United States. To the states so selected were added those others for which the farm value of the given item represented one per cent or more of the total farm value of all the agriculture of the state. The first test selected 917 assignments of states to items. The second test added 14 more, making a total of 931. Columns 2 and 3 of table 1 present the number of states in which any farm value was reported and the number of states assigned on the basis of the two farm value tests. Column 4 shows for each item the percentage of the United States total farm value which was excluded by the selection process. It there appears that in no case<sup>2</sup> were states aggregating more than one per cent of the United

<sup>1</sup> U. S. Dept. Agr., Crop Reporting Board: Farm value, gross income and cash income from farm production, 1934-35, by states and commodities. Washington, D. C., August 1936. Not all of the crops listed in this report were included. Some, like "truck crops" and "small fruits," were excluded because of the lack of differentiation between the component items. Others, like pop corn, emmer, and spelt, were omitted because their total farm value was so small and their geographical distribution was so restricted as not to affect materially the results of the study. Some farm products of general distribution were included (such as livestock, corn, and some of the fruits) to balance the highly specialized crops, while others were excluded (such as oats, hay, and wheat) to permit more manageable presentation.

<sup>2</sup> Except sugar cane and beets, for which the Crop Reporting Board did not separately report all states.

TABLE 1. FARM ITEMS ANALYZED, NUMBER OF STATES IN WHICH FARM VALUE IS REPORTED, AND PERCENTAGE OF UNITED STATES FARM VALUE EXCLUDED BY REGIONALIZATION

Items included in analysis	Number of states in which any farm value was reported	Number of states assigned on basis of two-farm value tests	Percentage of United States farm value excluded by selection
1	2	3	4
Corn	48	43	0.17
Grain sorghum	10	10	—
Sweet sorghum for forage	19	19	—
Peanuts	12	12	—
Soybeans	22	22	—
Cowpeas	19	16	0.23
Velvet beans	6	6	—
Dry beans	16	15	0.06
Flaxseed	12	10	0.09
Barley	36	31	0.32
Rye	34	32	0.16
Buckwheat	22	22	—
Broomcorn	7	7	—
Rice	4	4	—
Cotton	19	16	0.08
Sugar cane and beets	*	16	6.24*
Sweet potatoes	22	22	—
Tobacco	19	16	0.04
Clover seed	21	20	0.08
Alfalfa seed	21	21	—
Strawberries	47	42	0.09
Grapes	44	30	0.61
Apples	46	42	0.20
Peaches	40	36	0.14
Pears	42	37	0.27
Oranges	5	5	—
Grapefruit	4	4	—
Hops	3	3	—
Cranberries	5	5	—
Pecans	12	12	—
Mules	35	35	—
Horses	46	40	0.32
Cattle and calves	48	48	—
Milk	48	48	—
Sheep and lambs	48	35	0.31
Hogs	48	46	0.09
Mohair	7	7	—
Chickens	48	48	—
Eggs (chicken)	48	48	—

\* Cont'd. Given as "Other States" in mimeograph.

States farm value excluded. In only one instance (grapes) were states with as much as half of one per cent excluded. Some exclusion of producing states occurred for only 18 of the 39 items studied. We may conclude therefore that substantially all of the farm value of the items considered was included in the selection of states just described.



In the absence of any regionalization, to ask farmers in all 48 states for data on all 39 of these items would entail asking 1,872 questions. If the questions were asked in only the selected states for each item, answers would be obtained in only 50 per cent of the cases. To raise this "percentage of operativeness,"<sup>3</sup> separate schedules for each state might be constructed, in which case the percentage of operativeness would be 100 for each state. Or any number between 1 and 48 of schedules could be built, combining the states in such a way as to eliminate inoperative items as far as possible. However, having selected the items and states, obviously the next step was to make a series of checklists of items by states. Table 2 contains an example of these checklists—that for the New England states.

TABLE 2. CHECKLIST OF REGIONALIZED ITEMS: NEW ENGLAND STATES

Connecticut	Rhode Island	Massachusetts	Vermont	New Hampshire	Maine
Corn	x	x	x	x	out
Tobacco	out	x	out	out	out
Apples	x	x	x	x	x
Strawberries	x	x	x	x	x
Grapes	out	out	out	out	out
Peaches	out	out	out	out	out
Pears	out	x	out	out	out
Cattle and calves	x	x	x	x	x
Milk	x	x	x	x	x
Chickens	x	x	x	x	x
Chicken eggs	x	x	x	x	x
out	Hogs	x	x	x	x
out	out	Cranberries	out	out	out
out	out	out	Dry beans	out	x
out	out	out	Buckwheat	out	x
out	out	out	Horses	out	x

The next phase of the analysis was to determine the best combinations of states into groups of different orders. Fortunately all of the possible combinations of states did not need to be tested; types-of-farming areas and geographic proximity enabled us to canvass the possibilities rather well with some 86 combinations. For each of these the "percentage of operativeness" was computed.

The following step was to test the combinations of states by assembling them in four groups (table 3). Group A contains 10 regions of from four to six states each, with an average of 4.8 states

<sup>3</sup> The "percentage of operativeness" is derived as follows:  $a/si$  where  $a$  is aggregate number of operative items for the group,  $s$  = number of states in the group, and  $i$  = number of crops in the group of states.

TABLE 3. TRIAL GROUPINGS OF REGIONS

Group A—10 regions

Group B—15 crop reporting regions

Area	No. of states in group	No. of items involved by 100 per cent coverage	Percentage operative	Area	No. of states in group	No. of items involved by 100 per cent coverage	Percentage operative
New England	6	96	61	New England	6	96	61
Middle Atlantic	5	115	75	New York	1	18	100
Va., N.C., Ky., Tenn.	4	104	94	Del. & Md.	2	40	85
S.C., Ga., Ala., Fla.	4	104	86	Pa. & N.J.	2	42	81
W.Va., Ohio, Ind., Ill., Mich., Wis.	6	180	72	Va., N.C., Ky., Tenn.	4	104	94
Minn., N. Dak., S.Dak., Iowa, Nebr.	5	125	75	S.C., Ga., Fla., Ala., Miss.	5	130	85
Mo., Kans., Ak., Okla.	4	136	75	Ohio, Ind., Mich., Wis., Iowa, W.Va.	6	168	77
Miss., La., Tex., N.Mex.	4	128	75	Ill., Mo.	2	54	93
Colo., Wyo., Mont., Idaho, Nev., Utah	6	150	65	Minn., N.Dak., S.Dak.	3	57	84
Calif., Ore., Wash., Ariz.	4	120	71	Nebr., Kans.	2	52	92
Average	5		75	Ark., La., Okla., Tex.	4	132	77
Group D—24 regions				Mont., Wyo.	2	36	89
Maine, Vt.	2	22	95	Colo., N. Mex., Ariz.	3	81	77
Mass., Conn.	2	26	85	Idaho, Utah, Nev., Wash., Ore.	5	115	70
R.I., & N.H.	2	16	100	Calif.	1	28	100
N.Y., Pa., Md.	3	60	90	Average	3.2		84
N.J., Del.	2	32	94	Group C—19 regions			
Va., N.C.	2	52	96	Maine, Vt.	2	22	95
S.C., Ga.	2	46	98	Mass., Conn.	2	26	85
Fla., Ala.	2	50	90	R.I. & N.H.	2	16	100
Ohio, Ind.	2	48	96	N.Y., Pa., Md.	3	60	90
W.Va., Ky., Tenn.	3	75	88	N.J., Del.	2	32	94
Miss., La.	2	48	92	Ohio, Ind.	2	48	96
Mich., Wis.	2	48	88	Miss., La.	2	48	92
Minn., Iowa	2	48	85	Va., W.Va., N.C., Ky., Tenn.	5	130	89
Ill., Mo.	2	54	93	Iowa., Kans., Nebr.	3	81	88
Ark. & Okla.	2	54	91	Minn., N.Dak., S.Dak.	3	57	84
Tex.	1	29	100	Tex., Ark., & Okla.	3	96	82
N.Dak., S.Dak.	2	32	94	Fla., Ala., Ga., S.C.	4	104	86
Kans., Nebr.	2	52	92	Colo., Idaho, Mont.	3	69	83
Mont., Wyo.	2	36	89	Nev., Utah, Wyo.	3	63	65
Colo., Idaho	2	44	91	Mich., Wis.	2	48	88
Utah, Nev.	2	34	76	Ill., Mo.	2	54	93
N.Mex., Ariz.	2	46	87	N.Mex. & Ariz.	2	46	87
Calif.	1	28	100	Calif.	1	28	100
Wash., Ore.	2	42	90	Wash., Ore.	2	42	90
Average	2		92	Average	2.5		89

per region. Group B has 15 regions of from one to six states each with an average of 3 states per region (this was the regionalization used in the June 1937 acreage survey of the Division of Crop and Livestock Estimates). Group C has 19 regions of from two to five states each, with an average of 2.5 states per region. Group D contains 24 regions of from one to three states and an average of two states per region. The average percentage of operativeness (per region), which would be 100 if each state were a separate region, is reduced to 92 in Group D (24 regions). Increasing the size of the regions as in Group C (19 regions), reduces the average percentage of operativeness to 89. A further increase in the size of the regions as in Group B (15 regions) lowers the average percentage of operativeness to 84. Finally, Group A with only 10 regions has an average percentage of operativeness of 75. While this is much lower than for the other groups, it still is much superior to the showing of one schedule for the entire 48 states where the corresponding figure is 50.

It should be noted that the average percentages of operativeness in these four groups are simple averages for the regions within these groups. Simple averages may be adequate for this preliminary study but before attempting to make practical use of the technique, weighting should be used. The state and regional percentages might be weighted with the total farm value of the regionalized crops or with some other measure of their importance. The results of weighting would be twofold: (1) the average percentages of operativeness for the groups of regions might be materially altered; (2) the selection of the regions within the groups, which with simple averages now seem to be optima for the respective numbers of regions, might need revision.

### *Conclusions*

The groupings of states in table 3 are recommended for consideration both in their own right and as examples of a technique which ought to be used more thoroughly in advance of a decision on the regionalization of the 1940 Census schedule. The actual production data from the 1935 Census might be subjected to a parallel analysis.

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### III. CENSUS DATA ON LAND UTILIZATION

This note points out some of the difficulties in using census data relating to the utilization of land in farms. Most of these difficulties are undoubtedly known to the Census Bureau.

The instructions in connection with question 12 of the "trial Schedule" ask that "the total number of acres in this farm" "include all outlying or separate fields, meadows, pastures, wood land or waste land *operated*" by the farmer "whether owned, rented from others or managed for others." This is not misleading in the usual farming community but unless restricted to land owned, rented or managed by the farmer it is likely to be deceptive in grazing and cut-over areas or where waste and abandoned land is abundant. Wild hay is to be reported under question 128 and also in question 13 which called for "land from which crops were harvested in 1937." In many places wild hay is harvested from marshes, sloughs or waste land owned by lumber companies or railroads not owned, rented or managed by the farmer. If the area of hay land is added to the land in farm itself it swells the total crop area and the size of the farm. Marsh hay is usually harvested only in dry years, hence this circumstance may increase the apparent size of farms appreciably if the census year happens to be a dry one. In abandoned drainage areas or on western lands where cattle roam over abandoned farm lands the same uncertainty is introduced. Would it not be more accurate to have the area in the farm and in harvested crops restricted to owned, rented or managed land and all other land reported under another designation?

Much interest has been shown by the Forest Service, the Soil Conservation Service and other agencies in farm wood lands. The figures reported by the census are impressive. According to the 1935 data, there were about 185 million acres of wood land on the farms of the United States which is more than half of the area in other privately owned forests. The first question is, how much of this is in real farm ownership and how much has been included under "outlying" and "separate" wood land, and the second is, how much of this is permanent managed farm forest and how much is in the process of being cleared and being made ready for crops? The instructions to #17 read, "Include as wood land all farm wood lots or timber tracts, natural or planted, and cut over with young growth, which has or will have value as wood or timber." Land being grazed or cleared has value as wood or timber *now* but its

value in the future is disappearing. One of the most illuminating questions asked in the 1925 census showed that in spite of the agricultural depression over 4 million acres of forest or cut-over land had been cleared and made suitable for crops from 1920 to 1925.

The area as now reported gives undue importance to wood land as a forest land use; also the value of forest products as reported under questions 156 and 157 tends to give a wrong impression. For instance, the census of 1930 reported the sale of farm wood land products at seventeen and one half million dollars which was practically equal to the value of all chickens raised on Wisconsin farms in 1929. As a matter of fact, this income came practically all from the clearing of land or the slow depletion of the forest capital. Perhaps the fault lies with the interpretation of the data rather than in the figures themselves. However, the Soil Conservation Service and other agencies anxious to conserve the soil are groping for figures to show that it does or does not pay to keep land under forest cover in addition to the value of the wood land for control of floods and protection of the land from erosion. Probably the ungrazed wood lot comes nearer to being a truly managed wood land than any other designation we have. Grazed wood land is on the way to rapid extinction. Would it be possible to get reports on the land in process of being cleared as well as the true wood lot?

The final question deals with the land called "all other land now in this farm" (#20). This includes the land of least usefulness, the waste land, as well as house yards, barnyards, and feed lots. Gardens, on the other hand, are listed with crops. Would it be possible to separate all the land making up the farmstead and get a fairly close estimate of its area? The total area of the land in farmsteads has been estimated as 24 million acres, which is far in excess of the 10 million said to be in cities and villages. A refinement of the data would give us a more nearly correct picture of the area of the more or less residential part of the farm.

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#### IV. THE AGRICULTURAL POPULATION: REALISM VS. NOMINALISM IN THE CENSUS OF AGRICULTURE

Two aspects will be considered: (1) Who should be interviewed in the Census of Agriculture? And (2) what questions should be on the schedule? It matters little what questions are asked unless

the right people are included in the enumeration. So serious are the misconceptions prevailing because past agricultural censuses have restricted their interviews to farm operators, have made no attempt to reach laborers except through the farm operators, that the first question receives major consideration in this discussion.

## I

### *Who Should be Included in the Agricultural Population*

As abstract propositions the two following statements probably would receive almost unanimous approval: (1) the agricultural population consists of those persons whose principal gainful employment is in agricultural pursuits plus the dependent members of their immediate families; and (2) the Census of Agriculture should make a complete enumeration of the agricultural population.

But if these propositions are accepted, then it is easily demonstrated that the approach which has been used by the Census has not and cannot secure an accurate and inclusive enumeration of the agricultural population, because the Census has attempted to define the agricultural population by residence instead of what people do (by occupation). Heretofore, facts about the farm population have been secured as follows: (1) certain units of land have been designated as farms, and (2) all persons residing on such land, and only these, have been enumerated as the farm population.<sup>1</sup>

The data secured in this manner have been divided into rural-farm and urban-farm categories so that one examining the statistical tables, and knowing that rural and urban are mutually exclu-

<sup>1</sup> Note by chairman of the Round Table: It would seem that the second proposition here presented must rest on the assumption of a population census in conjunction with the census of agriculture. Where only a census of agriculture is taken it would be clearly impractical to search out city residents who work on farms. Such a classification as that proposed could be made at the decennial periods when both agriculture and population are covered though some difficult problems of sorting would undoubtedly arise. Is it not logical to look to the occupational classifications in the census of population for this type of information? Certainly every effort should be made to reach and include *all* farm people in the census of population, by direct enumeration if possible. The Census of Agriculture is after all primarily oriented to the material aspects of farms rather than to farm people. In this respect it is more like the Census of Manufactures which deals with material rather than human data in the main. It would seem logical therefore to plan the Census of Population so as to yield the fullest possible information on those problems relating primarily to people, supplementing this as much as possible with such human data as can be secured for the farm areas through the Census of Agriculture. This would possibly imply a different definition of "farm population" from that now in use and probably greater emphasis in the Census of Agriculture on presentation of more adequate data relating to all the people on farms, but would not presume coverage, in the Census of Agriculture, of farm workers living in cities.



sive categories, almost inevitably receives the impression that a complete inventory has been taken. Because of this persons using the data almost invariably have done so under the impression that they had facts pertaining to the agricultural population as a whole.

The error is evident when one compares the data on occupations with that on residence. There are many tabulations in the 1930 Census which deal with the gainful occupations of the population ten years of age and over. One of these, Number 10 in the state tables, rather incidentally presents an occupational classification of the urban, the rural-farm, and the rural-nonfarm populations. This particular classification furnishes the key to an understanding of many of the most puzzling questions regarding Census procedures and results. Tables 1, 2, and 3 were prepared to present some of the most pertinent data derived from these tabulations. (Tables presented only in part and for purposes of illustration.)

TABLE 1. GAINFULLY EMPLOYED MALES 10 YEARS OF AGE AND OVER WHO WERE ENGAGED IN AGRICULTURE, BY RESIDENCE, 1930

State	Urban		Rural-farm		Rural-nonfarm	
	Number engaged in agriculture	Percentage of total gainful workers	Number not engaged in agriculture	Percentage of total gainful workers	Number engaged in agriculture	Percentage of total gainful workers
Alabama	5,977	2.7	28,562	7.3	19,208	12.1
Arizona	2,295	4.9	4,429	15.3	9,863	16.6
Arkansas	4,735	4.2	19,175	5.7	16,832	16.7
California	72,492	5.2	29,063	13.4	61,141	18.7
Colorado	7,229	4.5	7,782	8.6	12,175	17.0
Connecticut	6,417	1.8	8,512	30.4	9,555	8.0
Delaware	611	1.5	1,914	12.4	2,658	12.4
Florida	13,599	6.0	11,987	14.2	29,921	22.0
Georgia	7,601	2.9	33,772	8.2	24,567	14.3
Idaho	3,647	9.3	5,595	9.6	7,591	18.1

Table 1 shows the importance of agriculture in supplying employment for urban, rural-farm, and rural-nonfarm residents. Because the importance of agriculture in the total economy varies so greatly from state to state, table 2 was prepared to show the place of residence of agriculture's gainful workers. Finally, because it was evident that the agricultural wage worker and his family were most frequently missed by the agricultural Census, table 3 was constructed to show how many wage workers there were in each state, and how many of these resided on rural farms. The tabula-

TABLE 2. RESIDENTIAL DISTRIBUTION OF THE MALES 10 YEARS OF AGE AND OVER WHO ARE GAINFULLY EMPLOYED IN AGRICULTURE, 1930

State	Percentage residing in urban districts	Percentage residing in rural-nonfarm territory	Percentage residing on rural farms
Alabama	1.54	4.94	93.52
Arizona	6.24	26.83	66.93
Arkansas	1.41	5.00	93.59
California	22.50	18.98	58.52
Colorado	7.08	11.93	80.99
Connecticut	18.11	26.98	54.91
Delaware	3.65	15.86	80.49
Florida	11.72	25.79	62.49
Georgia	1.85	5.96	92.19
Idaho	5.69	11.84	82.47

TABLE 3. RESIDENCE OF MALES 10 YEARS OF AGE AND OVER WHO WERE EMPLOYED AS AGRICULTURAL WAGE WORKERS, 1930

State	Number in the state	Number residing on rural-farms	Percentage rural-farm workers are of all farm workers
Alabama	63,107	45,516	72.1
Arizona	19,713	10,003	50.7
Arkansas	53,380	40,828	76.5
California	184,824	80,226	43.4
Colorado	37,081	22,709	61.2
Connecticut	19,068	6,228	32.7
Delaware	6,522	3,745	57.4
Florida	53,244	20,017	37.6
Georgia	90,840	68,573	75.5
Idaho	20,080	12,705	63.3

lations presented are for males only. Unfortunately it has been impossible to combine urban-farm and rural-farm in these computations, but urban-farm population is too insignificant to have exerted any very great influence or to call for serious modification of any of the conclusions.

When is an agriculturist a farmer? What are the chances for a person gainfully employed in agriculture to be classed among the farm population? If an attempt is made to answer these questions on the basis of the 1930 Census data, the answers must be somewhat as follows:

1. In the United States as a whole, a male 10 years of age or over and gainfully employed in agriculture has 87 chances out of 100 of being included in the farm population.

2. In the case of farm operators the chances are increased to 95 out of 100.
3. A farm laborer's chances are only 75 out of 100; those of wage working farm laborer (i.e. not an unpaid family laborer) are still less, 64 out of 100.

Consider some of the data upon which these statements are based. In the urban population of the United States in 1930 nearly half a million (423,970), or 2 per cent of the gainfully employed male persons 10 years of age and over, were classed as agriculturists. At the same time the entire urban-farm population, male and female, young and old, was only 287,837. The great majority of these urban agriculturists (285,635) were farm laborers paid on a wage basis. Thus if Census procedures and results are accepted at face value, urban agriculturists are not farmers unless their residences are located on what are rather arbitrarily included as farms. It hardly need be mentioned that most agricultural laborers who reside in cities do not reside on farms.

But the foregoing are not the most disconcerting data. Consider the facts relating to the rural-nonfarm population. In this group nearly a million (835,847), 12 per cent of the total, gainfully employed males 10 years of age or over were occupied in agricultural pursuits. Again the bulk of these, 633,380, were wage workers, although the total included 164,627 farm operators. Such data make it evident that a person can reside in rural territory, spend all his energies in cultivating the soil, and still not be included in the farm population. In fact, if he is an agricultural laborer paid on a wage basis, the chances are 28 out of 100 that he and his family will not be numbered among the farm population. If all male agricultural wage workers are considered, the possibility of residence inside the corporation limits of some center with more than 2,500 inhabitants, plus the likelihood of living on rural territory not classed as farm, make the chances 36 out of 100 that the cultivator and his family will not be counted as part of the farm population.<sup>2</sup>

<sup>2</sup> These data provide the answer to two very important queries by Paul S. Taylor, of the University of California. "Query: The typical contract laborer in the mountain and middle western sugar beet areas is assisted by a number of unpaid family laborers. How does the census record these? They are not 'farm operator's family labor,' nor are they hired (paid) labor. But they are the most important element in the labor supply in a number of areas. In western cotton areas and in some fruit and vegetable areas a similar condition frequently exists. Probably it would be best to tabulate them in a separate classification as 'laborer's unpaid family labor,' comparable to owner's or sharecropper's family labor."

But even this is not all. The residence-basis procedure for determining the farm population brings into the rural-farm population group more than one million (1,010,429) males 10 years of age and over whose gainful employment is in other industries than agriculture. In 1930 this number constituted 11 per cent of the entire number of gainfully employed rural-farm males. Thus the methods of enumerating the farm population which have been used in the past have not only caused large numbers of agriculturists, particularly farm laborers and their families, to be omitted from the farm population, but for every nine genuine agriculturists have brought in one person whose *bona fide* employment is in a nonagricultural industry.<sup>3</sup>

As might be expected there are wide variations between the states in all these respects. The percentage of the gainfully employed urban males who are engaged in tilling the soil is highest in Idaho, New Mexico, and Utah, all of which have utilized the village-community type of settlement, and in which some of these farm villages have grown to be above the 2,500 mark. On the other hand, the percentage of urban residents among the males gainfully employed in agriculture is highest in the most industrialized portions of the nation. Rhode Island leads with 56 per cent, followed by Massachusetts with 48 per cent. California with its hordes of agricultural laborers is third with 23 per cent. In the South, where urban centers are few and the share-wage system more effectively ties the laborer to the soil, the percentages are very low; 1.0 in Mississippi, 1.2 in Virginia, and 1.3 in North Carolina. The percentages are also low in the Great Plains area.

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"Query: In Idaho and California table peas frequently are picked by gangs of laborers working under a contractor. The farmer contracts to pay him, say 30 cents a hamper; the contractor pays the pickers, usually using punched tickets, without payrolls. How does the census record these? They should be included as hired laborers, but special instruction may be necessary to ensure it."

<sup>3</sup> If the gainfully employed in agriculture plus the dependent members of their families are the real farm population, then it becomes readily apparent that the importance of the agricultural population is under-estimated by the present methods of determining the farm population. Thus the number of gainfully employed males in the rural-farm population was only 9,318,959 in 1930, while the number of males gainfully employed in agriculture was 9,568,347, or a quarter of a million greater. In both the general population and the rural-farm population the number of persons per gainfully employed male averaged 3.2. Hence this ratio may be used to make an approximation to the real farm population. On this basis the farm population would have been 30,617,700 instead of the 30,157,513 which was reported. There would have been a net increase of almost one-half a million persons in the farm population had the data been secured on the basis of occupation rather than residence.

Omissions from the farm population of people who were both residents of rural territory and gainfully employed in agriculture were greatest in Connecticut, Arizona, Florida, and Utah. In each of these states more than one-fourth of the gainfully employed male agriculturists living in rural districts failed to qualify as farm population because they did not reside on Census "farms."

People not engaged in agriculture were counted as farmers most frequently in Pennsylvania, Rhode Island, Massachusetts, and Connecticut. In all of these states more than 30 per cent of the gainfully employed males in the so-called rural-farm population find their chief employment in nonagricultural pursuits. Pennsylvania ranks highest with a percentage of 37.3.

One could go on at length but enough has been covered to open the problem.

The obvious solution for the problem is to enumerate the agricultural population on an occupational basis, including all persons gainfully employed in agriculture plus the dependent members of their immediate families. In the event this cannot be done, the occupational classification of the urban, rural-farm, and rural-nonfarm populations should be extended to the county tables. It would also be helpful if the urban population were subdivided into the urban-farm and urban-nonfarm categories.

## II

### *The Questions on the Schedule of the Agricultural Census*

1. Questions 5 to 8 on "Tenure" and 32 and 33 on "Other Land Owned" bring up again the inexcusable practice of considering croppers as tenants and farmer operators. Land is never rented to croppers, and a statement that it is rented to them is a contradiction in terms. Census data will never be of any great value for programs of activity in the South, such as those conducted by the A.A.A., unless the actual operating unit, that is the plantation, is used on the basis for the tabulations. Neither can any great reliance or significance be attached to data on the changes in the number of farms in the South, the percentages of tenancy or the trends in tenancy, per farm income, etc., as long as the plantation unit is artificially carved up into "farms." The supplemental schedule represents a concession from past practice, but it is not enough. It still will not reveal the fundamental similarities between the cotton plantation on which laborers are paid on a share-of-the-crop basis,

the sugar plantation where laborers are paid a cash wage, and the western ranch where wage hands perform the manual labor. If croppers are enumerated as farm operators, the ranch "hand" and the resident laborer should also be included as farm operators. Otherwise the comparability of the statistics is vitiated before the data are collected.

Those who need usable agricultural statistics for the South can only look forward to the day, when the Census will come to the realization that much of the South is not cut to the family-farm pattern. Only then will it abandon its conventional but unrealistic attempts at bringing the United States' most important expression of large-scale agriculture (the cotton plantation) into that familiar mould.

2. Questions 45 and 46 should be revised in accordance with the following suggestions by Paul S. Taylor.

1. Item 45, "family labor," should be segregated in tabulation, according to tenure of the operator. To include in one tabulation the unpaid laborers of the share-cropper's family with those of the cash tenant's, manager's or owner's family is to conceal the most important facts concerning status which the figures can reveal.
2. Item 46. The number of hired laborers on the quarterly dates should be sub-classified to show:
  - (a) living on operator's farm
  - (b) living off operator's farm

This would go far toward revealing whether the status of the laborer is that of the traditional "hired man" or not.

If there is serious question as to the accuracy of answers to the farm labor schedule, I suggest that news releases with facsimile of question 46 be issued quarterly during the year preceding taking of the census. This will induce a good many farmers to record the desired data at the time, so that they will be on file when the enumerator arrives. Such publicity will be most effective with employers of large numbers of laborers, where the chances of error likewise are greatest.

3. The persistence of the same family on the same farm, generation after generation, is intimately related to the most vital questions of agriculture. It hardly need be insisted that they are fully as important as the age and sex of the livestock. Following question 37 in the schedule these questions need to be added.



What year did this farm come into the possession of the present operators' family?

How many generations of this family have operated this farm?

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### COURSES OFFERED AND LEVELS OF REGISTRATION IN AGRICULTURAL ECONOMICS AT LAND-GRANT INSTITUTIONS

Preparatory to outlining a curriculum for the newly organized teaching department of Agricultural Economics at the Louisiana State University a questionnaire was sent to the department or departments of each Land-Grant institution. The information sought concerned the courses offered, student enrollment by classes, graduate students seeking advanced degrees, and other items such as total registration in agriculture and whether the courses were required or not. The material received has been analyzed and briefly interpreted.

Since many of those who gave generously of their time to answer and return the questionnaire have asked for a copy of the results, it seems only appropriate to meet such a request in this manner. Thus this summary carries those parts of the information which seem most appropriate for general distribution. In no way is it to be thought of as critical of any department for what was reported. The most successful departments have developed about individuals rather than courses.

There is a wide variation in the organization of departments and in their location relative to Colleges or Divisions of the respective institutions. This made it impossible to report, for all institutions, some of the information called for in the schedule. However, there seemed to be sufficient uniformity in the main items to permit their grouping into totals.

Many of the replies were accompanied by supporting explanations that helped to clarify the tabular material. Any doubtful points were cleared up by further correspondence. Courses reported as not given in 1935-36 (some were for 1936-37), those with no enrollment, and "short courses" were not used in the analysis. These were negligible in number.

In 13 states the work usually considered within the scope of a Department of Agricultural Economics is in Economics, Sociology,

Business Administration, or others. This is apparently true at Colorado State College, Iowa State College, Connecticut State College, University of Tennessee, South Dakota State College, and Washington State College. The University of Wyoming reported the courses in the Department of Agronomy. This is not unexpected since many departments have traveled that route in their earlier stages. At some institutions the field of work is divided. This is evident at Kentucky, Michigan State College, and to an extent at Washington State College.

It is quite common to find the Rural Sociology courses in the Department of Agricultural Economics. At some institutions the department title includes Rural Sociology. An attempt was made in this study to obtain information on Rural Sociology, but it met with only meagre success. Apparently the courses are not so definitely established yet as are those usually grouped with Agricultural Economics. Ten departments include the Rural Sociology courses (Arkansas, Arizona, Georgia, Iowa State College, Kentucky, North Carolina State, Ohio State University, South Carolina, University of Tennessee, and Virginia Polytechnic Institute). Of course, two are departments that include Economics and Sociology, leaving only eight that are strictly in the class of separate departments of Agricultural Economics with Rural Sociology included. The location of courses in Rural Sociology is about evenly divided between Agriculture and Arts and Sciences. At eight institutions Rural Sociology is a separate department in the College of Agriculture. Since this confusion about Rural Sociology prevailed, it has not been included in the tabulations lest some injustice be done it through omissions on the questionnaires returned.

Fourteen of the 48 institutions were on the "term" rather than the "semester" basis. No correction has been attempted for this condition. Presumably all courses have some possibility of representation when more courses are necessary as under the "term" plan. Also no adjusting has been made for differences in the credits carried by each course.

The editing done by the writer, designed to bring as much uniformity into the results as possible, consisted mainly of an examination of each questionnaire to see if courses had been classified according to the suggested major divisions, or titles, with the registration by classes, and to verify the courses with those reported by the catalogue in so far as was possible. Also it was neces-

sary to divide the registration where the reporter did not attempt to make the complete breakdown between classes. This was done by prorating the total registration to each class in the ratio that the number in each class bore to the total for all of the institutions that reported the registration in detail. There were relatively few institutions that did not give a complete classification of the registration. Since the idea was more to ascertain the approximate level at which the title was usually taken than to get mere numbers taking the courses under a given title, the discrepancies that resulted would have very little effect upon the results.

In order to facilitate the reporting of courses, the questionnaire was divided into titles as follows: Farm Management and Farm Accounting, Marketing and Market Organization, Cooperative Marketing, Rural Sociology, Statistics, Prices, Land Economics, Tenure and Land Appraisal, Taxation, Farm and Business Law, Farm Finance, History of Agriculture, Public Problems and Policies for Agriculture, and Other Subjects. It was necessary to make further division of "Other Subjects" after the questionnaires were returned, because of the large number and diversity of courses reported. These were covered by additional titles, such as Principles of Agricultural Economics, Production Economics, Agricultural Resources, Industry and Geography, Public Finance, General Seminars, Advanced Agricultural Economics, Thesis, and "Other Subjects." The courses were listed under these titles or were so transferred before tabulation.

There was a wide range in the number of courses in the Department of Agricultural Economics, varying from one each at Arizona and Vermont to over twenty at such institutions as Illinois, Cornell, Minnesota, Wisconsin, Oregon, and Maine. The average number of courses per institution was 12. Half of the institutions had at least 10 and not more than 16 courses. Clearly those institutions that are outstanding for their work have reached such a size that a comprehensive group of courses are offered.

In table 1 will be found the number of courses being given under each title, the number of states giving the courses, and the registration by classes in 1935-36. Farm Management, including the advanced courses and seminars, is the only subject offered by every state. It ranks highest in Junior, Senior, and Special registration. In total registration it ranks next to Principles of Agricultural Economics, including advanced courses and seminars. There are,

TABLE 1. REGISTRATION BY TITLES AND BY CLASSES IN AGRICULTURAL ECONOMICS, LAND GRANT COLLEGES AND UNIVERSITIES OF THE UNITED STATES, 1935-1936

Title	No. states giving courses under this title	No. of courses given	Registration in 1935-1936*					
			Freshman	Sophomore	Junior	Senior	Graduate	Special
Farm Management, Including Advanced Courses and Seminars	48	96	159	328	1,175	1,307	171	17
Principles of Agricultural Economics, Including Advanced Courses and Seminars	35	55	706	1,583	377	247	187	62
Marketing and Market Organization	42	81	53	353	637	844	159	7
Farm Accounting	30	44	146	263	356	160	33	3
Cooperative Marketing	34	37	1	9	363	376	61	2
Land Economics	26	38	74	56	161	349	130	1
Agricultural Resources, Industry and Geography	6	7	595	79	51	13	0	0
Agricultural Law	12	15	9	138	287	202	7	2
Farm Finance	26	28	3	6	107	436	75	2
Statistics	22	33	3	48	307	138	193	2
Public Problems of Agriculture	23	27	0	24	73	322	97	1
Prices	26	33	1	19	153	213	116	2
History of Agriculture	11	14	238	17	61	97	21	0
Taxation	8	9	2	30	85	74	27	0
Production Economics	7	9	48	50	52	27	26	0
Public Finance	6	6	0	0	62	114	11	1
Research Methods, Problems, Thesis, General Seminars, etc	19	46	0	0	7	156	185	0
Other Subjects	7	12	5	12	35	178	57	2
Total	—	590	2,043	3,015	4,349	5,253	1,486	104
								16,250

\* Minnesota, Texas A &amp; M, and Utah State College reported for the year 1936-1937.

on the average, two courses in Farm Management per institution with the range from one to nine. Oregon State College, Illinois, Cornell, Minnesota, Virginia, and Wyoming ranked high. Seventy-nine per cent of the total registration in Farm Management is in the Junior and Senior years.

Farm Accounting is usually closely associated with the work in Farm Management. It ranked fifth in distribution among the states and fourth in student registration. In this tabulation it has been treated as a separate title. The level at which it is taken is less definite than for Farm Management. Its largest registration is in the Junior and Sophomore years with about equal participation by Freshmen and Seniors.

Marketing and Market Organization is the second most widely offered title with 42 of the 48 states reporting courses. The average is about two courses per institution. The largest number of courses is offered at Cornell, Illinois, Maine, Minnesota, and Ohio. Cooperative Marketing ranks very close to Marketing and Market Organization in distribution and is even more definite in its level. Only one course per institution is usual. Ninety-one per cent of the registration in Cooperative Marketing is at the Junior and Senior level. Marketing and Market Organization is much less definite in the level at which it is taken, with only 72 per cent Junior and Senior registration. Graduate and Sophomore registration is relatively well represented.

The highest title in total registration, by a very meagre margin, is the Principles and Introductory courses in Agricultural Economics, including the advanced courses and seminars. Considerable variation exists in the level at which this title is offered. At some institutions it is a beginning course in Economic Principles (the courses in General Economics have not been included even though they may be given by the department), while others apparently require a prerequisite in Economic Principles. The Principles course in Agricultural Economics is dominantly at the Sophomore level with Freshman next in rank. Seventy-two per cent of the total registration is in these two years. About 22 per cent is at the Freshman level.

Perhaps of all the titles considered the one for courses entitled Agricultural Economics is the hardest to handle because of the fact that so many graduate courses of a department are offered as advanced Agricultural Economics or Agricultural Economics Semi-

nar. Eighteen of the courses that have been included under this title are in such a category. These courses had 83 per cent of the graduate registration.

A large number of the Seniors and Graduates are in the courses grouped here under the compound title of Research Methods, General Seminars, Problems, Thesis, and the like. These are dominantly for Graduates, though Seniors are well represented. Several departments offer courses that come under the head of Production Economics. This too shows no definite level since the registration is about equal for the first three years and likewise for the Seniors and Graduates.

From the titles discussed so far it is apparent that the major registration of a department is of students taking Principles of Agricultural Economics, Farm Management, Marketing and Market Organization, Farm Accounting, and Cooperative Marketing. Courses under these titles are the ones that must contribute to the preparation of that large group of undergraduate students if they are to get some fundamentals that are offered through instruction in a Department of Agricultural Economics.

Of the other courses there is a wide variation in the level at which they are taken. Agricultural Resources, Industry, and Geography are dominantly Freshman courses. History of Agriculture is offered for Seniors and Juniors except at Texas A & M College where it is offered to Freshmen. This accounts for the high registration in the Freshman year. Such titles as Land Economics, Farm Finance, Public Problems of Agriculture, Prices, and Public Finance are definite in their levels, being dominantly Senior, with Junior and Graduate registration about evenly represented. At a slightly lower level we find Statistics and Taxation in which Juniors exceed either Seniors or graduates. The work in Agricultural Law had its highest registration in the Junior year with large enrollments for both Seniors and Sophomores. It is definitely an undergraduate course.

Under "Other Subjects" we find such courses as Agricultural Extension Methods, Economics of Consumption, International Trade, Economic Relations in Agriculture, Economics of Enterprise, and Food Product Inspection. They are taken largely by Seniors and Graduates.

#### *Graduate Student Enrollment*

Of particular interest to Louisiana State University as well as



many institutions which do not plan to develop their departments at the graduate level is the question of where students are working towards advanced degrees in Agricultural Economics. The Southern States have had limited opportunities for advanced training in this field. From the information obtained in the questionnaire it was possible to prepare a table (table 2) showing the registration by states for advanced degrees.

TABLE 2. ENROLLMENT BY STATES FOR ADVANCED DEGREES IN THE FIELD OF AGRICULTURAL ECONOMICS

State*	Number of graduate students specializing or taking their major work toward		State*	Number of graduate students specializing or taking their major work toward	
	M.A. or M.S.	Ph.D.		M.A. or M.S.	Ph.D.
California	9	5	Nebraska	10	0
Connecticut	6	0	New Jersey	2	1
Florida	3	0	New York	20	29
Idaho	2	0	North Carolina	6	0
Illinois	42	6	North Dakota	3	0
Indiana	6	1	Ohio	12	7
Iowa	18	5	Oklahoma	8	0
Kansas	5	0	Pennsylvania	3	0
Kentucky	5	0	Rhode Island	1	0
Louisiana	5	0	South Dakota	6	0
Maine	2	0	Tennessee	4	0
Maryland	8	1	Texas	8	3
Massachusetts	5	0	Utah	6	0
Michigan	1	0	Virginia	4	0
Minnesota	20	11	Wisconsin	10	15
Missouri	9	2	Wyoming	3	0
Montana	11	0			
			Total	263	86

\* The following states reported no students for advanced degrees: Alabama, Arkansas, Arizona, Colorado, Delaware, Georgia, Mississippi, Nevada, New Hampshire, New Mexico, Oregon, South Carolina, Vermont, Washington, West Virginia.

Fifteen states, five from the thirteen Southern States, reported no students working toward an advanced degree. The remaining 33 states reported a total of 263 students at the M.A. or M.S. level and 86 at the Ph.D. level. Of these 46 per cent of the M.A. or M.S. and 85 per cent of the doctorate registration were at the six leading institutions of University of Illinois, Iowa State College, University of Minnesota, Cornell University, Ohio State University and University of Wisconsin.

Only one institution in the South, Texas A & M College, reported candidates working toward the doctorate in Agricultural

Economics. Eight institutions in the South had a total of 43 students, or 16.3 per cent, at the M.A. and M.S. level.

In conclusion it should again be pointed out that the data discussed here cover only Land-Grant Institutions. This limitation has necessarily excluded some of the institutions that offer courses in Agricultural Economics. Also, many of those who replied pointed out changes that were in progress at the time or were anticipated. These included such things as revised and new courses, department reorganization, new affiliations, change from "term" to "semester" basis, and others. Clearly the picture attempted here can be considered only a snapshot of a constantly changing condition.

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### A TEST FOR THE INDEPENDENCE OF GROUPS OF AGRICULTURAL PRICES APPLIED TO HOG, CATTLE, CORN AND OAT PRICES

In the study of agricultural prices where we are considering several sets of commodities, it frequently happens that we are more interested in relationships between groups of prices than we are in the relationships between the individual prices themselves. A method of testing groups of variates for independence has been given by S. S. Wilks.<sup>1</sup> This method should have considerable application in psychology, anthropology, and economics. However, except for one application by Mauchy,<sup>2</sup> the author knows of no other use of this method at present. We shall consider in this note an extension of this method which makes it more useful particularly in the study of certain types of data such as price series. The method will then be illustrated by an application to two groups of prices: hog and cattle prices, and corn and oat prices.

The assumptions made in our note are precisely those necessary in ordinary normal linear regression analysis. All variates are assumed to be normally distributed and we assume linear dependence on the factors determining trend and cyclical variations in the price data. All these relations are supposed to remain constant with time also. Hence, before this method can give reasonable

<sup>1</sup> S. S. Wilks, On the independence of  $k$  sets of normally distributed statistical variables, *Econometrica*, 3: (3) 309-326, 1935.

<sup>2</sup> J. W. Mauchy, A new approach to terrestrial-solar relationships, *Transactions of the American Geophysical Union*, Eighth annual meeting, pp. 171-174, 1937.

results we must know whether these assumptions hold. In the example which we give, the assumptions seem to hold to some extent. Much more study will be needed, however, before we can state just to what degree they do hold.

First of all, let us consider briefly a case where there are no cyclical variations or trend in the data so that there is no danger of spurious correlations. For simplicity, instead of considering the most general case with  $k$  groups of variables, let us take the case of three groups of variables or variates, each of which is given for  $N$  years.

Let there be  $r$  series in the first group,  $s$  in the second and  $t$  in the third. For the year  $\alpha$  the data is given as

Group I	$x_{1,\alpha}, x_{2,\alpha}, \dots, x_{r,\alpha};$
Group II	$x_{r+1,\alpha}, x_{r+2,\alpha}, \dots, x_{r+s,\alpha};$
Group III	$x_{r+s+1,\alpha}, x_{r+s+2,\alpha}, \dots, x_{r+s+t,\alpha}.$

The correlation between  $x_i$  and  $x_j$  is denoted by  $r_{x_i x_j}$  or more simply as  $r_{ij}$ . The theoretical correlation between the same two variables is denoted by  $\rho_{ij}$ . The Neyman-Pearson method of testing hypothesis is used in the development given by Wilks. We make the hypothesis  $H_I$  that the groups of variables are independent, that is, that  $\rho_{ij}=0$  if  $x_i$  and  $x_j$  are from different groups. In other words we are to test whether it is reasonable that our sample could have arisen from a population whose correlation determinant is

$$|\rho_{ij}| \quad i, j = 1, 2, \dots, r$$

where  $\rho_{ij}=0$  if  $x_i$  and  $x_j$  are from different groups. It is obvious that even if  $H_I$  is true,  $r_{ij}$  will not be zero in general even in cases where the two variables are from different groups due to the sampling fluctuations of  $r_{ij}$ . Using the method of maximum likelihood<sup>3</sup> we may derive the likelihood of  $H_I$ . We denote it by  $W$ . It is found that

$$W = \frac{|r_{ij}|}{R_I R_{II} R_{III}}, \quad i, j = 1, 2, \dots, r+s+t.$$

where

$$\begin{aligned} R_I &= |r_{uv}|, & u, v &= 1, 2, \dots, r, \\ R_{II} &= |r_{kl}|, & k, l &= r+1, r+2, \dots, r+s, \\ R_{III} &= |r_{mn}|, & m, n &= r+s+1, r+s+2, \dots, r+s+t. \end{aligned}$$

<sup>3</sup> S. S. Wilks, *Statistical Inference*, Princeton University, 1937.

It can be shown that  $0 \leq W \leq 1$ . The greater  $W$  is, the more evidence our data gives that our hypothesis  $H_I$  is true.

It is clear that if  $W$  is to be of any value we must know something about its distribution. More precisely, we must know what the probability is of getting  $W$ 's more unfavorable to the hypothesis by repeated sampling of the same size. We denote the probability in repeated samples of the same size of getting values of  $W$  more unfavorable to the hypothesis  $H_I$  of independence of the groups by  $J_W(r, s, t; N)$ . Wilks has given the exact formula for calculating  $J_W(r, s, t; N)$  for certain values of  $r, s$  and  $t$  in terms of  $W$  and  $N$ . In cases where we have two groups instead of three he has also given the formulas in certain cases for  $J_W(r, s; N)$ . For all other cases an approximate formula is given for large samples. For example in cases where there are only two groups instead of three with 2 variables in the first group and  $n$  in the second

$$J_W(2, n; N) = B\sqrt{W}(N - n - 2, n)$$

where  $B_W$  is the well known function

$$B_W(p, q) = \frac{\Gamma(p+q)}{\Gamma(p)\Gamma(q)} \int_0^W x^{p-1}(1-x)^{q-1}dx$$

for which tables exist.<sup>4</sup> Having found  $J_W$  our problem is solved since we can tell whether our sample is significant or not.

In the above case we assumed that there was no trend or cyclical variation affecting the variables. In time series, unfortunately, this is rarely the case. Under the assumptions that we have made, if we know the factors causing the trend and cyclical variations, we may consider deviations of our data from regression equations, since the relationships were assumed linear, and by a modification of the formula for  $W$  given above we may use the method outlined above. This case was discussed in brief by Wilks in the paper already referred to, but the exact formula for  $W$  in terms of the correlation coefficients was not published.

Let us assume that there are  $u$  factors causing the trend and cyclical variations on the variables. These  $u$  factors give  $u$  new series of data. Let their values for the year  $\alpha$  be given by

$$x_{r+s+t+1,\alpha}, x_{r+s+t+2,\alpha}, \dots, x_{r+s+t+u,\alpha}$$

and let  $r_{ij}$  be the correlation coefficient between  $x_i$  and  $x_j$ , where  $i$  and  $j$  take values from 1 to  $r+s+t+u$ . We recall that our first ex-

<sup>4</sup> K. Pearson (Editor), *Tables of the Incomplete Beta Function*, Biometric Laboratory, University of London, 1934.

pression for  $W$  was a large determinant divided by three smaller ones, one corresponding to each group of variables. To get our new expression for  $W$  we augment each of the determinants by adjoining to it  $u$  rows and columns of correlation coefficients formed from the variables in the determinant and the  $u$  new factors and divide each determinant by  $|r_{pq}|$ ,  $p, q = r+s+t+1, r+s+t+2, \dots, r+s+t+u$ . Hence we now have

$$W = \frac{|r_{ij}| |r_{pq}|^{-1}}{Q_I Q_{II} Q_{III} |r_{pq}|^{-3}}$$

where  $i, j = 1, 2, \dots, r+s+t+u$  and

$$Q_I = |r_{uv}|, u, v = 1, 2, \dots, r, r+s+t+1, \dots, r+s+t+u,$$

$$Q_{II} = |r_{kl}|, k, l = r+1, r+2, \dots, r+s, r+s+t+1,$$

$$\dots, r+s+t+u,$$

$$Q_{III} = |r_{mn}|, m, n = r+s+1, r+s+2, \dots, r+s+t, r+s+t+1,$$

$$\dots, r+s+t+u.$$

After  $W$  has been found using this new formula, we treat it exactly as in the first case except that in our new formula for  $J_W(r, s, t; N)$  we replace  $N$  by  $N-u+1$  so that we have

$$J_W(r, s, t, N - u + 1).$$

To make the above clear let us apply this method to an example. We consider a set of wholesale price series as given in the *Statistical Abstracts of the United States*. A period of 22 years will be used from 1914 to 1935. Hence  $N=22$ . The first group is taken to consist of two series, hog prices and cattle prices; the second group also consists of two series, corn prices and oat prices. The problem is to find whether the two groups of prices are independent. To remove the trend we use the index of wholesale prices and the index of farm wages. The correlation coefficients needed were found to be as follows:

	1	2	3	4	5	6
	Cattle	Hogs	Corn	Oats	Farm Prices	Farm Wages
1. Cattle	1.000	.844	.378	.466	.876	.752
2. Hogs	.844	1.000	.430	.174	.885	.725
3. Corn	.378	.430	1.000	.387	.418	.222
4. Oats	.466	.174	.387	1.000	.560	.359
5. Farm Prices	.876	.885	.418	.560	1.000	.889
6. Farm Wages	.752	.725	.222	.359	.889	1.000

Since we have only two groups in our example and the farm prices and wages are merely used to remove trend and cyclical variations, the expression for  $W$  becomes

$$W = \frac{|r_{ij}| |r_{pq}|^{-1}}{|r_{kl}| |r_{mn}| |r_{pq}|^{-2}} \quad \begin{array}{l} i, j = 1, 2, 3, 4, 5, 6 \\ k, l = 1, 2, 5, 6 \\ m, n = 3, 4, 5, 6 \\ p, q = 5, 6. \end{array}$$

Substituting our values of the correlation coefficient we obtain

$$W = \frac{\begin{vmatrix} 1.000 & .844 & .378 & .466 & .876 & .752 \\ .844 & 1.000 & .430 & .174 & .885 & .725 \\ .378 & .430 & 1.000 & .387 & .418 & .222 \\ .466 & .174 & .387 & 1.000 & .560 & .359 \\ .876 & .885 & .418 & .560 & 1.000 & .889 \\ .752 & .725 & .222 & .359 & .889 & 1.000 \end{vmatrix} \cdot \begin{vmatrix} 1.000 & .889 \\ .889 & 1.000 \end{vmatrix}}{\begin{vmatrix} 1.000 & .844 & .876 & .752 \\ .844 & 1.000 & .885 & .725 \\ .876 & .885 & 1.000 & .889 \\ .752 & .725 & .889 & 1.000 \end{vmatrix} \cdot \begin{vmatrix} 1.000 & .387 & .418 & .222 \\ .387 & 1.000 & .560 & .359 \\ .418 & .560 & 1.000 & .889 \\ .222 & .359 & .889 & 1.000 \end{vmatrix}}$$

The above determinants may be evaluated by any of the well known methods. The value of  $W$  in our case was found to be .1695.

In the case under consideration the probability in repeated samples of the same size of obtaining values of  $W$  less favorable to the hypothesis of independence is given by  $J_W(2, 2; 21)$ . The exact formula for this case is given by Wilks so that the approximation will not have to be resorted to. We have

$$J_W(2, 2; 21) = B\sqrt{W}(17, 2)$$

For  $W = .1695$ ,  $J_W(2, 2; 21) = .000003 \dots$ . Hence the hypothesis  $H_I$  is not supported and the groups are not independent.

If the assumptions made are reasonable, we can confidently state that the two groups are related. However, this is certainly questionable in this example and the above solution to the problem is not offered as a final one. It is hoped, on the other hand, that it will serve as an illustration of a method which should be useful in other studies of price series and related problems.

It would be very interesting to apply this test to other groups of commodities to test what the results would show. In cases where a correlation study of the variables has already been made about half of the work will have been done, and it would only be necessary



to calculate the determinants for the denominator of the expression for  $W$  since the others are usually already known.

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### FARM MARKETING COSTS AND WAGE-HOUR LEGISLATION

Farm Labor is specifically exempt from the provisions of the "Fair Labor Standards Act of 1938" passed by the 75th Congress. Employees of rural agencies which market farm commodities are, however, subject to the act. Thus, there is a strong probability that the new law will: (1) change cost conditions in these marketing agencies, (2) alter marketing margins, and (3) alter the conditions under which farm commodities can be marketed.<sup>1</sup>

There are likewise *a priori* bases for the belief that the wage and hour conditions which prevail in farm marketing agencies are in some measure due to the physical and time features of the process of moving farm products from farm to local market. In view of these considerations it appears pertinent to ask: What are labor conditions in rural agencies with which farmers have a particular interest? To what extent are the labor conditions in such agencies a result of the peculiarities of the farming enterprise? And finally, what will be the impact of the Wages and Hours law upon the rural farm commodity marketing agencies and through them upon farmers?

In an effort to answer the above questions for areas which are more or less similar to the cash grain, livestock and dairy sections of Iowa a survey was made of the farm commodity marketing agencies in four Iowa counties. The primary information obtained pertained to the wage and hour conditions which prevail in elevators, creameries, poultry buying and packing establishments, marketing associations and canning factories.

On the question of wages this study revealed that in the farm marketing agencies studied, 89 per cent of the employees are receiving less than 40 cents an hour. Assuming for the moment that the employees of these agencies were to work 60 hours a week, that the number of employees would remain roughly constant and that

<sup>1</sup> Labor legislation as it impinges upon agriculture raises several important questions, i.e., increasing cost rigidities as related to cost-price adjustments and labor buying power as related to farm commodity prices. These and similar problems not included in this paper are worthy of treatment in separate studies.

a minimum hourly wage of 35 cents were introduced by legislative enactment, it is possible to estimate the increased wage bill for the agencies in question.<sup>2</sup> Under these conditions the weekly wage bill of cooperative elevators would rise \$8.16 per establishment, private elevators would experience a required increase of \$7.08 a week. Private creameries would be required an increase of \$23.50 in weekly wage costs while cooperative creameries are found to fall short of meeting a 35 cent per hour requirement by a weekly total per establishment of \$10.50. Poultry produce establishments would be affected the most with an increased weekly wage bill of \$51.60 for the average establishment.

Turning to the question of hours of employment it is found that 95 per cent of the employees studied are working over 60 hours a week. The relatively long hours of employment in elevators, creameries and produce houses appears to be in considerable measure because these agencies regulate the hours of business to meet the needs and desires of farmer patrons. Not infrequently this necessitates the acceptance of produce from farmers at intervals over a ten to sixteen hour day. On the other hand there are rather typically considerable periods during the day when employees are largely inactive, a fact which considerably modifies the long work day. The question may well be raised as to whether it is necessary for agencies purchasing farm commodities to maintain 10, 12 or up to 16 hour days in order to best serve farmers. There is little doubt that the elevator, creamery or produce house, competing with similar agencies for the business of a limited number of patrons, cannot ordinarily offer less service than a competitor and still operate profitably. If, however, all agencies were compelled by a common force to reduce their hours of business it would not, from this standpoint, materially affect the competitive position of any one enterprise and the employees' time would in general tend to be more fully utilized. From the standpoint of the farmer who may wish from convenience or necessity to market his produce at late evening or very early morning hours, any pressure forcing marketing agencies to shorten the business day would not be favorably received. There are no doubt, certain heavy marketing periods during which a long business day is necessary in order to receive large amounts

<sup>2</sup> The 35 cent per hour figure is used on the assumption that some differential may be permitted for rural areas. If this assumption should prove to be false the figures may be adjusted to the 40 cent per hour requirement very easily. This applies also the figure used for minimum hours.

of produce which arrive entirely uncoordinated as to time. In general, however, the early morning and late evening arrivals of produce are more often than not a result of the farmers' desire not to make a break in the work day by a trip to town.

Assuming that an imperative 50-hour maximum work week were to be imposed upon these agencies what adjustments might be made by them?<sup>3</sup> Would elevator owners, for example, increase the number of employees, use the present labor more effectively, or reduce the hours of service to patrons? The type of adjustment would differ considerable as between establishments but there is little evidence to the effect that there would be any significant increase in the number of employees with the exception of poultry produce houses and creameries. Those hours of the day during which incoming quantities of produce are typically low would not be likely to appear on the pay-time of employees and if this were not sufficient to meet the full adjustment the owner or manager would very probably carry such day end hours as appear essential to hold patrons. Owner operators are particularly apt to make a part of the adjustment in this manner. Those concerns which are now only able to maintain solvency by dint of extremely low wages and long hours would in time be forced to give up the business to the more efficient firms and farmers might expect somewhat less adequate services.

At this point the question may well be raised as to who would bear such additional costs as are imposed by wage-hour legislation?

To the extent that competition is absent in the marketing system and to the extent that capital is relatively fluid in the realm of marketing, the increased cost will not be shared by the agencies which first receive it.

Farmers do not characteristically reduce output, except in the long run adjustment, when experiencing a decline in prices but rather absorb this change in reduced imputed wages and interest. Because of this circumstance they are particularly susceptible as short run points of incidence of an increase in marketing costs.

In the long run, since the increased marketing cost, via labor cost, is general and applicable to practically all agencies and since it may be agreed that the elasticity of consumer demand for farm commodities as a whole is relatively inelastic it follows that consumers would eventually bear the increased burden of costs. They

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<sup>3</sup> See footnote 2.

would assume this burden to the extent that the increase was reflected in reduced production of farm commodities.

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### INDEXES OF PURCHASING POWER

The chief feature of agricultural policy in more recent years has been the designing of programs whose principle object it was to bring about changes in the relative purchasing power of agricultural producers. One common measure of the relationship has been an index of purchasing power of farm products. The Bureau of Agricultural Economics of the United States Department of Agriculture publishes an index of "Prices Paid By Farmers" for items used in living and production and uses this index to deflate the index of "Prices Received By Farmers" to arrive at an index of "Purchasing Power of Farm Products." While this is not necessarily an index of purchasing power of producers it has been used as a rough measure of producer purchasing power. Such an index is frequently a misleading statement of current producer purchasing power. During drouth periods especially, prices and price ratios were favorable while producers had little or nothing to sell.

Newspapers have frequently changed the wording of releases dealing with prices so that the price ratios showing purchasing power of a fixed list of products are made to read "purchasing power of producers." While the distinction between the two may seem a mere technicality to publicists, it is one of very considerable importance.

An index of farmers' purchasing power may be set up by dividing an index of monthly cash farm income by the index of prices paid by farmers. The monthly income data for the United States is, however, available only for a comparatively recent period. For several years estimates of monthly farm cash income have been made for the state of Minnesota covering about 95 per cent of the total farm cash income. An index of this monthly income has been adjusted for changes in state farm population. The resulting index was then divided by the B.A.E. index of prices paid by farmers to get an index of purchasing power of farmers. (While the use of this "index of prices paid by U. S. farmers" is objectionable because it is not adapted to Minnesota costs, it is nevertheless the best available for the purpose and does not seriously limit the validity of the comparison to be made below.)

A comparison of the two state purchasing power indexes, one for a bill of farm products, the other for producers, shows rather wide differences between the two. The following table gives the frequencies of the differences between the two Minnesota indexes for the period 1923-36.

TABLE 1. FREQUENCIES OF MONTHLY DIFFERENCES BETWEEN "INDEX OF PURCHASING POWER OF PRODUCERS" AND "INDEX OF PURCHASING POWER OF FARM PRODUCTS," 1923-1936

Difference (in points)	Frequencies	Difference (in points)	Frequencies
+		-	
25 & over	1	0- 4	28
20-24	2	5- 9	38
15-19	2	10-14	19
10-14	8	15-19	8
5- 9	19	20-24	3
0- 4	28	25 & over	12

In the indexes here reviewed the distortion produced by misuse of terms was, of course, greatest during the two recent drouth years. There were a number of months during the drouth periods when the index of purchasing power of products was approximately 100, while the index of the purchasing power of producers was around 60. Over the 14-year period the differences between the two indexes exceeded 10 points in one-third of the months.

Such discrepancies are wider than they would be expected to be for the nation as a whole. But it is because these differences occur more acutely in limited regions that misunderstanding results from improper labeling. The size of these differences indicate the precautions that might be exercised by those who handle purchasing power indexes for publication. Misstatement and misunderstanding would be minimized if such care were taken.

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#### SOME POSSIBLE USES FOR THE COOP- ERATIVE WESTERN RANGE SURVEY IN ECONOMIC ANALYSIS

The Cooperative Western Range Survey has been carried out during the past year by the Agricultural Adjustment Administration, the Farm Security Administration, the Forest Service, the Division of Grazing, and other interested agencies and bureaus.

The purposes of this joint effort were principally to standardize procedure, to concentrate operations where most needed, and to assemble the results of the survey for certain areas in presenting an evaluation of grazing resources and an analysis of grazing land management problems. In a number of the western states the survey has completed this assembly of the survey data for at least one entire county.

This material is in such form that it can be summarized for land management units within the county, and when this is done it affords an opportunity for comparison:

1. Of the carrying capacity of the grazing lands for the grazing season with the capacity of the ranches for the winter maintenance of livestock.
2. Of the carrying capacity of both summer grazing lands and the ranches with past and present livestock populations.

This information has recently been made available for Petroleum County, Montana, and has been summarized for the Winnett Co-operative Grazing Association which has recently organized a district of 626,000 acres as a grazing land management unit in this county. There are now approximately 150 stock farms and ranches in this area, which own or lease 178,000 acres of land. There are an additional 175,000 acres of privately-owned land that is not now in farms. The Farm Security Administration has acquired 127,000 acres in the area. State lands account for 33,000 acres, county for 37,000, and "public domain" (now withdrawn for administration by the Division of Grazing) for 76,000 acres.

The Survey shows the capacity of the grazing lands used for the eight months' summer grazing season to be 8,400 animal units (five sheep or one cow equaling one unit). This is the grazing land not in "farms." The grazing land owned or leased by the stock farms and ranch operators is used largely as winter pastures.

The capacity of the ranch properties, that is of the feed crop lands and the winter pastures, is shown as 18,600 animal units for the four months' winter period. Approximately one-third of this is accounted for by the winter pastures, and the other two-thirds by the feed crop lands (meadows and grain hay). The capacity of the feed crop lands was determined by a farm survey of the area.

The Western Range Survey estimates that through management and the reseedling of abandoned farm lands (they are about 10 per



cent of the area), the grazing capacity of the range can be stepped up by 50 per cent, or to some 12,500 animal units for the eight months' grazing season, within the next ten years. This would still mean quite a lack of balance between the capacity of the ranges and the ranch properties. Due to the lower cost of maintenance on winter pasture, that part of the wintering capacity is always used first and to the fullest extent possible. The adjustment policy indicated is to attempt to seed a considerable portion of the feed crop lands to winter pasture. The climatic limitation requires from four to six weeks of winter feeding, with considerable variation possible. The present capacity of the feed crop lands would support livestock numbers equal to the estimated maximum capacity of the range lands for the entire four months' wintering period, without the use of the winter pastures. The indications are that this situation prevails in the adjacent areas, and that the adjustment will have to be made within the area. The feed crop production is adapted to winter maintenance but not to fattening or even to feeding as a "warming up" operation. With a shift of feed crop lands to pastures, some of them can be shifted to summer use in the adjustment to balance capacities.

The peak of livestock numbers in this area was approximately 20,000 animal units in 1933. As a result of drouth and feed shortage, the number now stands at around 3,000 animal units. If the capacity of the range can be increased to 12,500 animal units, the area would support about 100 small family-sized stock ranches, compared with the present number of 150.

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### SOME FACTORS RELATED TO TAX DELINQUENCY OF FARM REAL ESTATE IN KANSAS<sup>1</sup>

Students of problems in taxation have listed a number of factors involved in tax delinquency of farm real estate. It is the purpose of this study to select some of these factors which are tangible enough to be measured by statistical methods and show their relation to tax delinquency of farm real estate in Kansas.

Two methods have been used in studying these factors. The first was a cross tabulation study of soil type as related to tax

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<sup>1</sup> Contribution No. 99 from the Department of Agricultural Economics.

delinquency in Bourbon county and of tax rates as related to tax delinquency in Marshall county. The second was a correlation analysis of the factors related to the percentage of delinquency in 78 Kansas counties. The data were obtained by C. W. A. assistance and cover five years, 1928 to 1932.

Bourbon county, in southeastern Kansas, was used in the study of the relation of soil productivity to tax delinquency because a soil survey map of the county was available and because the delinquency data appeared reliable. Each soil type was put into one of four groups which represented four different grades for general agricultural production.<sup>2</sup> These groups were numbered in order of their agricultural productivity. Each of the 1376 tracts of real estate which became delinquent during the five years was located on the soil survey map by legal description and the acres of land in each of the four groups was determined by the use of a planimeter. The necessity for measuring each individual soil type was eliminated by the combination of certain types into larger groups as previously mentioned. This made the measurements more accurate than they otherwise would have been.

The percentage of the total acres in each group which became delinquent at any time during the period 1928-32 and the percentage of the total acreage in each group which was delinquent for different number of years, was calculated. The results are shown in table 1.

TABLE 1. PERCENTAGE OF THE TOTAL ACRES IN EACH SOIL GROUP WHICH BECAME DELINQUENT DURING THE PERIOD 1928-32 AND THE PERCENTAGE OF THE TOTAL ACRES IN EACH SOIL GROUP WHICH WAS DELINQUENT FOR DIFFERENCE NUMBERS OF YEARS IN BOURBON COUNTY

Soil Group	Percentage of the Total Acres in Each Soil Group Delinquent					
	Anytime 1928-1932	1 year	2 years	3 years	4 years	5 years
I	26.8	11.8	7.3	5.2	1.5	1.0
II	32.1	14.5	9.1	5.4	2.1	1.0
III	33.6	13.8	9.6	6.2	2.5	1.4
IV	37.3	14.8	9.7	9.5	2.2	1.0

The results show that while 26.8 per cent of the land of higher productivity was involved in delinquency, 37.3 per cent of the land of lower productivity was delinquent. It is surprising to note that the percentage of acres in group I, delinquent one year, was less

<sup>2</sup> Dr. W. H. Metzger, Associate Professor of Soils, Kansas State College, grouped the soil types into the four major classes according to their productivity.

than the percentage of the acres of group IV delinquent one year, while the percentage of the acreage of group I delinquent five years, was as high as the percentage of the acreage of group IV, delinquent five years. This may be due to the fact that the small number of acres delinquent five years prevented the factor of soil type from exerting its full effect. It should be remembered that the only criterion used in grouping the soils on productivity was soil type. A better index of productivity might have shown a greater tendency for poor land to be delinquent but soil type was the only standard available.

Marshall county, in northeastern Kansas, was used in the study of the relation of total tax rates to tax delinquency because it was the only county in which the total taxes levied on each delinquent property each year were available along with the total assessed value of the property. The properties were divided on the basis of the number of years they were delinquent and then divided on the basis of the calendar years in which they were delinquent. It was necessary to divide the properties on the basis of the calendar year in which they were delinquent and use a simple average of the total tax rate for the different years to avoid the effect of the general downward trend in tax rates during the period studied. The total tax rate on the non-delinquent farm real estate was calculated by subtracting the total assessed value and taxes levied on delinquent properties from the total assessed value and taxes levied on all farm real estate as given by the Tax Commission's report. The average total tax rate in mills for the years 1928-1932 on non-delinquent land, delinquent land, and land delinquent for different number of years, in Marshall county follows:

Delinquency Status	5-Yr. Simple Ave. of Tax Rates
All non-delinquent	13.72
All delinquent	14.41
Delinquent 1 year	14.15
Delinquent 2 years	14.18
Delinquent 3 years	14.25
Delinquent 4 years	14.91
Delinquent 5 years	15.11

These figures show that for the five years studied the tax rate on delinquent land averaged seven-tenths of a mill higher than on the

non-delinquent land. The figures also show that the tax rate is higher on properties delinquent four or five years and that there is not much difference in the tax rate on properties delinquent less than four years.

In the second part of the study certain factors were correlated with the percentage of delinquency for counties as a whole using 78 counties. Only 78 of the 105 counties in Kansas were used because the data were either incomplete or questionable in the other 27 counties. These 78 counties were fairly well distributed over Kansas except that a somewhat smaller proportion were in western Kansas where the delinquency was highest. This fact may have resulted in slightly lower correlation coefficients than otherwise would have been obtained. The data used represented only one year. Scatter diagrams indicated that there would be no significant advantage in using an average of data for several years because of the close correlation between the data on land value, tax rates, and delinquency for some particular year with similar data for other years. The results of this part of the study are summarized in table 2.

TABLE 2. COEFFICIENTS OF GROSS CORRELATIONS BETWEEN EACH PAIR OF VARIABLES AND THE MULTIPLE COEFFICIENTS OF CORRELATION FOR EACH GROUP OF FACTORS USED IN THE STUDY

Independent variables	1932 Tax Rates	Percentage of taxes levied in 1932 which became delinquent
1935 census land values	$r = -.42$	$r = -.33$
1932 tax rates		$r = .29$
Land values and tax rates		$R = .37$
Index of yields	$r = -.30$	$r = -.42$
1932 tax rates		$r = .29$
Index of yields and tax rates		$R = .46$

The correlation of 1935 census land values with the percentage of taxes levied which became delinquent was  $r = -.33$ . This result supports the general belief that there is a tendency for a larger percentage of the taxes levied to become delinquent in the counties of lower land value. When an index of yields calculated with the state average yields as the base and covering the years 1911-1932 was substituted for land value the correlation with the percentage of taxes levied which became delinquent was  $r = -.42$ . The substi-

tution resulted in a somewhat higher correlation coefficient thus suggesting that certain factors such as speculation which affect land values are not associated with ability to pay taxes. Another factor which was studied in relation to delinquency was the total tax rate. The correlation of the average total tax rate on farm property in 1932 with the percentage of the taxes delinquent was  $r = .29$  or the higher the total tax rate the higher the delinquency tends to be.

The correlation of both land values and total tax rates with the percentage of taxes which were delinquent was  $R = .37$  which was but little more than when land value alone was used. This was because there was a correlation of  $r = -.42$  between land values and total tax rates. In other words, the counties with the lower land value also had the higher total tax rate and therefore when land values were correlated with delinquency most of the effect of tax rates was considered. Since these two factors are closely related it is impossible to say to what extent each is responsible for tax delinquency but it is logical to assume that both are important. The correlation of index of yields and 1932 total tax rates with the percentage of taxes levied which were delinquent in 1932 was  $R = .46$  which was also but little better than when index of yields alone was used.

Income should logically be an important factor affecting the percentage of delinquency but since adequate income data by counties were not available its effect could not be studied. Lack of data also prevented a study of delinquency as related to many other factors that should be studied such as land use, tenure of operator, size of farm, and absentee ownership.

In conclusion, all indexes of soil productivity—soil type, land value, index of yields—indicate that it is the land of lower productivity which has the greatest chance of becoming delinquent. Higher tax rates are associated with land of lower productivity and with tax delinquency, so the farmer on the less desirable land is not only less likely to have something to pay his taxes with but he may actually have relatively heavier taxes to pay.

While it is not the purpose of this note to discuss remedies for tax delinquency, the facts which have been presented do suggest the need for eliminating the present over-assessment of low valued land, and the desirability of eliminating many small, inefficient taxing units to reduce tax burden and broaden the tax base.

L. F. MILLER

*Kansas Agricultural Experiment Station*

## OBITUARY: GEORGE FREDERICK WARREN

Dr. George Frederick Warren, one of the founders and the second president of the American Farm Economic Association died at Ithaca, New York, May 24, 1938. He was born at Harvard, Nebraska, February 16, 1874. He is survived by his wife, Mary Whitson Warren, and six children, Stanley, Jean, Richard, George Frederick, Martha, and Mary. He received his Bachelor of Science degree from the University of Nebraska in 1897. In 1904 he received the degree of Master of Science in Agriculture and in 1905 the degree of Doctor of Philosophy from Cornell University. During the year 1905-06, he was Horticulturist at the New Jersey Agricultural Experiment Station. He returned to Cornell in 1906 as Assistant Professor of Agronomy. From 1909 to 1911 he was Professor of Farm Crops and Farm Management. In 1911 he was made Professor in the newly created department of Farm Management. He held the position of head of this department from the time of its organization until he died.

No complete compilation of Dr. Warren's writings is available, but he unquestionably made more contributions to the literature and to the basic research in Agricultural Economics than did any other person. He was author of the following books: *Elements of Agriculture*, 1909; *Laboratory Exercises in Farm Management*, 1910; *Farm Management*, 1913; *Dairy Farming* (with Eckles), 1916; *The Agricultural Situation* (with Pearson), 1924; *Prices* (with Pearson), 1932; *Gold and Prices* (with Pearson), 1935; *World Prices and the Building Industry* (with Pearson), 1937.

Dr. Warren was a member of Sigma Xi honorary society; Gamma Alpha fraternity; Phi Kappa Phi honorary society; Alpha Zeta fraternity; Cosmos Club; American Economic Association; American Farm Economic Association; American Statistical Association; Econometric Society; Academie Mondiale de Agriculture and fellow organizer and vice-president of The International Conference of Agricultural Economists.

He was a member of the United States Department of Agriculture Commission to study agriculture in Europe, 1921; the United States Tariff Commission Survey of Danish Agriculture, 1923; the Amerikanischen Studien-Kommission, Germany, 1928; Governor Roosevelt's Agricultural Advisory Commission, 1929-1932; Gov-



ernor Lehman's Agricultural Advisory Commission, 1932-1933, and the New York State Reforestation Commission, 1929-1931. Early in 1933, Dr. Warren became an unofficial adviser to President Franklin D. Roosevelt on Monetary Problems.

George Frederick Warren was a pioneer in the study of the business aspects of farming. His "Apple Orchard Survey of Wayne County, New York," in 1905, and his "Agricultural Survey of Tompkins County, New York," in 1909, were early landmarks in the science of Farm Management. Since 1916, Dr. Warren has given a large portion of his time to research in statistics and prices. In the field of the science of Prices, Dr. Warren's work published as United States Department of Agriculture, Bulletin Number 999, "Prices of Farm Products in the United States," and Cornell Bulletin Number 416, "Prices of Farm Products in New York," together with Cornell Bulletin Number 466, "Interrelationships of Supply and Price," and Cornell Memoir Number 144, "The Physical Volume of Production in the United States" (the two latter jointly with F. A. Pearson) represent pioneer work.

Between 1906 and 1938, Dr. Warren built at Cornell University a research and teaching organization unique in the field of Agricultural Economics. He has a lasting memorial in his research and in his students that has no counterpart in the United States. In a great educational institution he impressed his ideals, his character and his philosophy of life on his students in a manner with few parallels in modern education.

Dr. Warren's philosophy of life was simple, honest and straightforward. His influence on this students was so profound that the criticism was sometimes made that his students were in a measure only small editions of himself. To his students this is understandable. He attracted students who were mentally equipped to use the scientific method in solving economic problems. He invariably used the inductive process in studying a problem and taught his students to do likewise. His dictum "get the facts first" became a part of the basic training of every student. Dr. Warren was never comfortable in reasoning, if the process led him far from the facts. Next to the greatness of his intellect, Dr. Warren's strongest characteristics were his unselfishness and his modesty.

He believed that Research and Education offered the greatest fields of opportunity for service for intelligent men and women. He

followed this course consistently throughout his own life and refused to accept responsibilities or honors that would lead him away from this field.

He had a peculiar gift for discovering problems and initiating research in profitable lines long before the importance of these problems was generally recognized. His last great contribution in the field of prices is illustrative of this point. This research, begun before 1916, had reached a stage of development that made it invaluable when it was needed during the post war deflation. Lines of research once initiated were continued after the period of general popularity had passed. Dr. Warren believed in the cumulative value of economic research. The labor income studies initiated in the early days at Cornell are still repeated periodically. He believed that in order to insure honest conclusions, economic studies should be made before problems reached the controversial stage.

In recent years he attracted large numbers of graduate students from all parts of the world. He died at the height of his usefulness.

E. C. YOUNG

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- Timoshenko, V. P., *Monetary Influences on Postwar Wheat Prices*, Wheat Studies Vol. 14, No. 7, Stanford University, Food Research Institute, 1938, pp. 263-318, \$1.00.
- Waite, Warren C. and Cox, Rex W., *Seasonal Variations of Prices and Marketings of Minnesota Agricultural Products, 1921-1935*, St. Paul, Minn. Agr. Exp. Sta. Technical Bul. 127, 1938, 59 pp.
- Wilmanns, Wolfgang, *Die Landwirtschaft Chinas (Berichte über Landwirtschaft, n.s. 133 sonderheft)*, Berlin, Germany, Verlagsbuchhandlung Paul Parey, 1938, 87 pp. \$6.50.
- Working, Holbrook, *Price Effects of Canadian Wheat Marketing*, Wheat Studies, Vol. 14, No. 2, Stanford University, Food Research Institute, 1937, pp. 37-68, \$1.00.

## BOOK REVIEWS

*Land Utilization in China*, by John Lossing Buck. Chicago: The University of Chicago Press. 1937. \$5 the volume, Vol. 1, xxxii, 494 pp.; vol. 2, xii, 146 pp.; vol. 3, xv, 473 pp.

This three-volume publication contains the results of a comprehensive survey undertaken by the Department of Agricultural Economics of the University of Nanking, and financed largely by the Institute of Pacific Relations, to obtain basic facts regarding land utilization, economic factors affecting farming, and rural standards of living in China. Data were collected from 38,256 farm families in 22 provinces. Field investigations, carried on between 1929 and 1933, the analysis of the data, and preparing the material for publication involved 8 years of work. Several American agriculturalists and statisticians and other foreign-trained specialists, in addition to Dr. Buck, the Director, assisted in various phases of the work. It goes without saying that, with the dearth of factual material regarding Chinese agriculture, this is a most valuable contribution to our knowledge of farming in China. Dr. Buck and the Institute of Pacific Relations are to be congratulated upon its completion.

Volume 1 contains an analysis of the survey material and presents the conclusions of the study. Dr. Buck, begins by giving a résumé of Chinese agriculture, embodying many facts obtained from the survey, and suggests a land use policy for improving agricultural conditions in China. This is followed by a discussion of the two agricultural regions which the survey data revealed to be characterized as rice and wheat. A description is then given of the eight agricultural areas which are subdivisions of the two main regions. Several chapters prepared by various specialists are devoted to the physical factors influencing land utilization, such as topography, climate, and soils.

The next chapters contain a thorough discussion of the utilization of the land covering all the crops that occupy one per cent or more of the land, cropping systems, utilization of the crops, live-stock raised, and related subjects. In the survey basic statistical data on population, standard of living, and nutrition were collected and an interesting chapter is devoted to each of these subjects. This volume also furnishes valuable information on many agricultural economic factors which affect rural life, such as tenancy,

labor, farm prices, marketing, credit, and taxation. The many photographs in this volume add to one's understanding of agricultural conditions in China. At the end of each chapter are references, many of which relate to material that is available in the United States.

Volume 2 is an atlas presenting geographically the data obtained through the survey. The agricultural regions, climate, topography, soils, crops, and livestock are shown in 179 maps. The largest group of maps deals with the farm commodities produced, indicates the percentage of the area in each crop, and gives planting and harvesting dates.

Volume 3 gives a tabulation of the data obtained by the field survey. It is published as a reference work to be used for further research study. The statistical material is so arranged that the country as a whole may be studied or any one of the eight agricultural areas.

These three volumes, on the whole, present a clear picture of Chinese agriculture. The results of the statistical procedure, however, in a few places may convey wrong impressions. In several instances a weighted average would have given a better result than the arithmetical average used. For example, the utilization of lint cotton on the farms is given as 68 per cent and of seed cotton as 58 per cent. Since mill consumption of Chinese raw cotton is approximately two and one-half million bales per year, these figures for home consumption would give a total annual crop in China of over 7 million bales, which is believed to be much too large. A weighted average would probably have given a much lower percentage of cotton consumed on the farm. There are many localities where cotton production is very small and practically all is consumed at home, but a few localities, where the large producers are located, sell from 70 to 100 per cent of their cotton crop.

A misinterpretation may also result from some of the maps showing crop distribution, given in the percentages of the total cultivated land. This method presents the correct picture for uniform cropping areas, as on the plains. But where only a small fraction of the land is cultivated, as in mountainous and swampy districts, the percentage of the crop grown may be high and yet the total production may be much smaller than in areas where much more land is tillable. Additional maps showing actual quantitative dis-



tribution of crops would have given, with those now in the atlas, a more accurate picture of the situation.

An important question which remains unanswered but on which the survey should have thrown a great deal of light is whether China, in utilizing her land resources, has been producing sufficient food and clothing for her own people.

The present military invasion of the country has thrown all economic forces out of adjustment and has greatly reduced the standards of living in many areas. It is difficult to know to what extent economic factors will have been changed in rural China when the present conflict ceases and peace is restored. Nevertheless, these volumes represent the most thorough and detailed inquiry ever made into the many phases of land utilization and rural life in China and will be of permanent value. For this all students of the subject must feel greatly indebted to Dr. Buck and his colleagues.

FRED J. ROSSITER

*Bureau of Agricultural Economics*

*Die Landwirtschaft Chinas Berichte Uber Landwirtschaft, 133*, By Wolfgang Wilmanns. Sonderheft, Berlin: Verlagsbuchhandlung Paul Parey. 1938. Pp. 87. RM. \$6.50.

In this 90 page book the author attempts to survey and appraise the whole range of facts, issues and problems regarding Chinese agriculture. Such a task necessarily precludes any profound analysis, but concentrates on a careful selection of the most relevant facts and issues so as to produce a reasonably accurate and intelligible sketch of Chinese agriculture in its economic, sociological, and political ramifications.

The author is much impressed with the tremendous population pressure upon the agricultural land resources. There is only about one-fourth as much agricultural land available per capita as in France and one-sixth as much as in the United States. In spite of that, the annual increase in population is estimated at three and one-half to four million people. It is interesting to note that in contrast to the western countries the birth rate seems to be distinctly higher in the well-to-do classes than among the poorer classes.

About 80 per cent of the population lives on farms and only 1 per cent is engaged in industry. The population pressure has led to extreme subdivision of farm size resulting in an average farm of

around four acres, but varying from about two acres in the south to ten acres in the Northwest Border Provinces. In Middle and South China, however, two to three crops can be harvested during one year, which reduces the difference between the North and South in terms of harvested acreage per unit.

The Chinese farmer is exceedingly efficient in methods of fertilization of the land. In spite of four thousand years of continuous cultivation practically without fallow, yields do not seem to show any signs of declining. All manure and organic matter is carefully preserved, silt is dragged from the bottom of the irrigation ditches and spread over the fields, green manure crops are plowed under. Oil cake forms an important nitrogen supply and in addition considerable quantities of commercial fertilizer are used.

In discussing the future of Chinese agriculture, the author sees little promise for rapid improvement. In recent years, however, the national government has begun to pursue energetic policies to improve the opportunities for Chinese farmers. Regarding land reforms the breaking up of large concentrated land holdings by wealthy clans in the south provinces constitutes an important task. Application of differential taxation of land, the establishment of "land cooperatives" which are granted a first option on all salable land and which are gradually to acquire the farm lands of whole communities for the purpose of leasing them to the residents of the communities are some of the devices which are being applied in an experimental way.

Transportation facilities and educational opportunities for the rural population are in a deplorable condition. The government has launched extensive programs for their expansion. Considering the tremendous size of the country and its population, progress would necessarily be slow, even had the conditions prior to the present military activities continued along the lines they were following when this book was written.

RAINER SCHICKELE

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*Danish Agriculture, its Economic Development; a Description and Economic Analysis Centering on the Free Trade Epoch, 1870-1930.*  
By Einar Jensen, Copenhagen: J. H. Schultz forlag. 1937. Pp. 417. \$3.75.

High Danish standards of agricultural efficiency in production and marketing, of education and rural development and of coop-

eration among farmers are almost proverbial. However, too little is known about the real facts. But few publications could be more helpful than those based on intelligent investigations and new interpretations of the world's most prolific agricultural experiment station and most progressive rural "happy valley": Denmark. At no time could a critical survey of this daring small nation of free traders be more beneficial than in these days of a universal high tide of super-protectionism.

Dr. Jensen's book contributes an unusually rich and comprehensive analysis and survey to the existing collection of books in every language on Danish agriculture. A mature economic conception, it is up-to-date in its synopsis. After a survey of political and economic history of the country, each important feature of the economic and social set-up of agriculture and its environment is presented in a critical manner which is always lively and stimulating because it invites comparison with other nations' agriculture as well as speculation about the applicability of similar methods elsewhere. All the data that might be desired are presented in handy form whether they concern natural resources or land tenure, the techniques of production or physical output, the adopted economic and agricultural policies or the financial situation. A well chosen collection of pictures and graphs adds to the satisfaction of the reader. Mr. Marquis W. Childs' book on Sweden has been a great commercial success though, or probably because, it was written in a more or less journalistic and impressionistic vein. Dr. Jensen's book with its solid wealth of economic facts and competent interpretation has qualities that deserve a greater success among economists. The scope of the work is so broad, and in general the grasp of the major problems so comprehensive that, there are naturally some details which are not filled in. One of the questions on which the reviewer would like to see some amplification is the chapter on Danish costs of production in animal husbandry and their continuing decline. With a few data based on physical measurements it could be made apparent that the Danish farmer produces with less economic effort than any other competing national group. However, this and a few similar spots do not particularly detract from the merits of the book.

Aside from being the best existing book on Danish agriculture and thereby on Denmark the volume contains something else that makes it attractive to those who are interested in the still unsolved

puzzle of agricultural depressions and their causes. Dr. Jensen takes Denmark as a test tube for checking up on a common explanation for the world's agricultural depression of the seventies, eighties and nineties of the last century. The widely accepted and oft repeated explanation of agricultural depressions, as offered by the "historical school" among agricultural economists, is based on the assumption that certain disturbances in agriculture caused by historical events bring about long agricultural depressions or crises. This school explains that the opening up of the American continent by the migration of farmers into the Mississippi Valley, combined with lowered costs of transportation, flooded the European market and depressed European farm prices below costs. The author has prepared a remarkable body of statistical material for a period of 60 to 70 years in Denmark. He demonstrates in a most convincing manner how during that long period Denmark—(and he assumes the same to be true for European agriculture at large)—made a gradual but profound adjustment to developments in domestic industry and in overseas agricultural, shifting more and more from production of bread grains to arable farming for livestock production. He also shows that this gradual historical process, which was initiated by a profound shift in the relationship between grain and livestock prices, was under way in Denmark and Europe for more than 20 years before the great agricultural depression started. This shift toward livestock production on arable land offered to Danish farming and to European agriculture at large, sufficient elasticity to evade the devastation of the market and the reduced profitability of farming caused by American grain, which was suggested by the "historical school."

In conclusion the author asserts that the causes for the depression in northwestern Europe, lasting from the seventies to the nineties, was not caused by a congestion of supplies and by sudden shifts within agriculture but was due to "extraneous factors expressing themselves through the monetary system." For these factors he offers much the same explanation as Keynes and his disciples. From charts we learn that Danish grain prices and prices of livestock products fell during the depression in equal proportion. The author explains that the deciding factor responsible for depression was the inadequate volume of money supplied by the banking system in comparison with the growing production of goods and services. The long term rigidity of the debt structure in agri-

culture, the slow turnover, and the difficulty involved in making drastic adjustments, precipitated the effects of the general price decline with considerable force upon agriculture.

Dr. Jensen's analysis is in agreement with one explanation in the recent volume by von Ciriacy-Wantrup on agricultural depressions (*Agrarkrisen und Stockungsspannen*), namely that the cause of the agricultural depression after the Franco-Prussian war was exogenous, or not caused by conditions within agriculture. However, it arrives at directly opposite conclusions as to what were the extraneous causes. The restriction of Jensen's explanations to the particular period and area which he was investigating, and the cautious computation and critical utilization of his statistical material make the concluding chapter of his book a valuable achievement in the search for plausible diagnosis of the causes of agricultural depressions. This search is—to be sure—as wide open as it ever was. We may choose between: 1. the endogenous theory of disproportionalities between supply and demand for agricultural commodities; 2. the exogenous theories (a) of disproportionality between stable agricultural and fluctuating industrial output, (b) of various sorts of monetary disturbances. Recently Altschul and Strauss gave testimony for theory 1 while von Ciriacy-Wantrup has sworn for 2(a) and Dr. Jensen like Warren and Pearson and many others before endorsed 2(b). However, there seems to remain the hope that through accumulation and elimination of arguments we may proceed toward more insight into this play of cause and effect.

KARL BRANDT

*Part-Time Farming in the Southeast*, by R. H. Allen, L. S. Cottrell, Jr., W. W. Troxell, Harriet L. Herring and A. D. Edwards. Washington: Works Progress Administration. Research Monograph IX. 1937. Pp. xxxviii, 317.

*Part-Time Farming in the United States*, by W. B. Jenkins and H. E. Robison. Washington: Bureau of the Census. Special Study. 1937. Pp. 205.

Although the flurry of articles, bulletins and proposals in part-time farming and related fields has subsided considerably during recent months, there should be no lack of interest in these two monographs. The publication of the Works Progress Administration offers recommendations for policy in publicly supported part-

time farming programs as well as valuable data and research procedures. The Census tract presents specially tabulated statistics from the 1930 and 1935 enumerations showing contrasts in part-time farming among various geographical, tenure and occupational groups.

The report on southeastern part-time farming is based upon an analysis of the industries and a study of 1,113 part-time farms and 1,334 nonfarming families in South Carolina, Georgia, and Alabama. The industrial problems, a description of part-time farming activities, and a comparison between farming and nonfarming industrial workers in respect to employment and living and social conditions are presented for the region as a whole and for five sub-regions. Seventeen individual case studies are given in an appendix.

The evidence leads to the major conclusion that part-time farming is economically advantageous. Part-time farm activities make an important contribution to family living, do not require a burdensome amount of extra work, allow a better diet, provide less costly housing, and do not appear to diminish opportunities for outside employment.

The problem of availability of land is no obstacle to the number of full-time industrial workers who desire to join the ranks of part-time farmers, and most industries are well located in relation to part-time farming locations. Nevertheless, the authors warn against any wide extension of the practice, especially to relief and unemployed nonfarming families.

Mainly because the outlook for increased employment is unfavorable and because part-time farms are not fully self-sufficient, "It is believed that part-time farming would be greatly benefited if encouragement, advice, actual guidance, and perhaps small loans were given both to present part-time farmers who want to increase their farming activities and to nonfarming industrial workers with steady employment who wish to begin farming and who appear to have the qualifications needed for success." Existing extension, relief, and credit agencies which have not met these needs in the past, might do so in the future with some reorientation of their programs.

Two comments may be made with regard to the presentation of statistical data. Where the data are presented in the form of a frequency distribution for the region as a whole, it sometimes appears



that the distribution as shown is largely dependent upon the number of cases sought in each subregion sampled. For instance, a regional frequency distribution leads to the sole conclusion regarding non-farm earnings that "fifty-six per cent of the part-time farms made less than \$500." The statement is true but not significant. In the three subregions where schedules were taken from negroes, 90 per cent of them earned less than \$500. In one of the other two subregions, only 26 per cent earned less than \$500 and in the other, 77 per cent. These apparently important contrasts can be secured only if the reader analyzes one of the appendix tables himself.

Probably because of the general uniformity in the organization of the tables, the evidence as presented in the body of the report does not always emphasize the really important inferences to be made. On pages 36 and 37, a discussion on "distance to work" follows a standardized table. Finally, with a reference to an appendix, the reader is informed that "the greater average distances traveled by part-time farmers is largely due to the inclusion of the commercial group" (sic). It would seem that a tabulation rather than the problem at hand had been analyzed.

Both the study of the Southeast and the Census publication indicate the wide range of interpretations by which the term "part-time farming" is still defined. In this respect, the Census report has an interesting statement, particularly with reference to limitations of the Census part-time farm definition. In the Southeastern study, lower limits are set at three-fourths of an acre of tillable land or \$50 worth of farm products and 50 days of outside labor by the household head. No upper limits are placed on farming, but the group is subdivided into commercial and non-commercial part-time farms. The Census includes all census farms reporting one or more days of work off the farm by the head of the family, with subclassifications by amount of such work but not by the size of the farming enterprise.

The Census study, in addition to statistics by states and counties for the country as a whole, also presents detailed information for 14 selected areas. While little analysis is made in comparison with the amount of data given, these reviews indicate in a general way the prevailing characteristics of part-time farming in different sections of the country.

The W. P. A. report indicates the type of highly desirable re-

sults that may be secured when competent, specialized investigators, through the cooperation of several agencies, concentrate upon answering certain questions basic to public policy.

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New Haven, Connecticut*

*Trends of Yield in Major Wheat Regions Since 1885*, by M. K. Bennett. Wheat Studies of the Food Research Institute. Vol. XIV, Nos. 3 and 6. Stanford University, Calif. 1937-38. Pp. 33, 38. \$0.75 each.

Wheat yields for the "world" excluding Russia and China appear to have had a downward trend in the last quarter century in contrast to the upward trend in the preceding quarter century. These two issues of the Wheat Studies are a discussion of the situation. In addition to the technical competence displayed, it is stimulating to find a discussion which attacks the trend problem by an analysis of the component elements comprising that trend. Almost without exception in statistical studies trend is simply a fitted line in which the analyst blissfully assumes that the underlying forces will continue to operate as his best-fit formula implies. No attempt in such studies is made to find why the trend behaved as it did, it is something to be eliminated and forgotten as rapidly as possible. It is unfortunate that this detail analysis leads to an uncertain conclusion with respect to the future, the concluding two sentences of the study being: "Under such circumstances it might seem reasonable to anticipate a declining tendency in world yield. But much depends upon the probable extent of change in these factors as well as upon unforeseeable changes in wheat varieties and agricultural techniques, and the outlook is in fact far from clear." Similar examination of the elements underlying trend in many other studies unquestionably would lead to similar doubt where the investigator now assumes reasonable certainty.

The included world wheat area was divided into fourteen regions, six of which lie in North America, five in Europe and Northern Africa, one in Asia and two in the Southern Hemisphere. Nine-year weighted moving averages, a three-year moving average of a seven-year moving average, were fitted to the reported average yields of these regions as a representation of trend. The results show a great diversity of trend. Five of the regions exhibit upward

trends, Northern Europe, France, Italy, Eastern North America and the U. S. Soft Winter. Five regions have stable or downward trends, Southeastern Europe, Western Mediterranean, U. S. Hard Winter, U. S. Spring, and the Prairie Provinces. Four regions have irregular or horizontal trends, Australia, South America, Pacific Northwest and India. The largest increases between the averages centered at 1890 and 1930 were Italy and Northern Europe with 6.4 and 6.2 bushels, respectively, and the largest decreases in the U. S. Spring area and the Prairie Provinces with 2.0 and 2.2 bushels. When these areas are grouped into old and new regions of wheat production, the old regions show an increase of yield and the newer regions a decline.

The factors underlying the trends in each of these areas are further analyzed on the basis of six types of influences: inaccuracies in the basic statistics; geographical shifts of wheat acreage within the region; the initial yield per acre; changes in the environment of the wheat plant due to natural causes (pest, weather, etc.); man-made changes in environment such as disease control rotations, fertilizers and regulation of water supply; and changes in types and varieties of wheat. Considerable heterogeneity in yield exists even after this separation into regions as evidenced by the divisions of the region into its high and low yielding areas and for which separate trends are shown on the yield charts for each region. These differences within the region are as great in many cases as between the region averages. It follows that shifts in acreage between the high and low yielding areas of the region have been important in determining the trend in yields in a number of areas. In general the shifts have been toward an expansion in the lower yielding areas. Thus, in the three regions of declining trend in the central plain of North America the primary factor has been a shift in acreage, and in three of the areas of increasing yield the increase was lessened by unfavorable shifts, although in two others shifts served to accelerate the increase.

An upward thrust in yields has come largely from the adoption of new and higher yielding types of wheat and man-made changes in agricultural technique. The adoption of new varieties has continued without interruption over the entire period and has perhaps exerted the greater influence since 1910 when "adjusted" world wheat yields were declining. The improvement in agricultural technique has likewise been continuous, there being only one re-

gion, the eastern part of Southeastern Europe where the common techniques in 1930 were not superior to 1910. The declining trend in wheat acreage thus does not turn out to be due to any general or localized retrogression of agricultural technique or to a slowing up in the development of new varieties of wheat. The old regions of wheat production appear to have increased their yields and the major share of the decline is evidently due to a shift in the area of production.

Needless to say the study shows the high quality of workmanship typical of the Food Research Institute work.

WARREN C. WAITE

*University of Minnesota*

*Financing Agriculture*, L. J. Norton, Danville, Illinois: Interstate Printing Co., 1938. Pp. 319. \$2.75.

This rather small book is filled with farm financing facts for the farm operator and the institutions and persons granting credit to farmers. It is different from previous American books relating to agricultural credit in that it has been prepared for the specific purpose of telling how credit should be obtained, used or granted. In fact the book is about evenly divided between the discussion of the problems of getting and using credit on the one hand and the problems of granting credit on the other. There is little discussion of the social aspects of credit. Small account is taken of historical development of credit and credit institutions and the description of the institutions is held largely to an incidental role. By contrast other books in the field have quite universally given only short space to credit management and have dealt largely with historical, institutional and social aspects of farm finance.

Nowhere else can a student obtain so many up-to-the-minute facts that will be of value to him in establishing a credit policy for his future farm operation. There are discussions of the management of long term, intermediate, and short term credit and credit is related also to types of farming and types of operation within the farm. The legal problems of farm credit are handled briefly but well and there are some good chapters on the problems connected with the financing of cooperatives.

The book will fill a long felt want in the field of farm finance and should find a considerable use in College courses in this subject. Except for those courses taught strictly from the farm management

viewpoint the book is not a sufficient text alone. It will need to be supplemented by other books dealing more adequately with the historical and institutional aspects of farm credit and perhaps also by books that go more deeply into the theories of finance.

Despite the many things that recommend the book it has a number of unfortunate faults. It appears in the first place to have been composed largely by placing a certain amount of meat about the "bones" of an outline. This impression is deepened, upon reading the book, by the continuous and repetitious use of figures and letters to list the points that are made. A limited use of these tabulating devices helps the reader. Too much of them is tiresome and uncomplimentary to his intelligence. The book is furthermore, at times painfully elementary. Every little accounting table even if it contains no more than two or three simple items is set off by itself. In fact the book sometimes gives the impression of being padded and, to use a term from newspaper vernacular, the percentage of "white" is abnormally large.

The style of writing is not pleasing. It is intended apparently to exemplify the so-called factual approach. The result is that each sentence follows the other in an unrelieved succession of statements of almost exactly the same weight. Consequently, the statements made have a certain flatness about them that is far from stimulating to the reader. Last but not least, the publishers have placed at end of the book several pages of advertising with the inevitable cheapening effect that such an inclusion has. The reviewer hazards that the book is merely a forerunner to a much superior book in the same field that the writer appears to be fully capable of preparing.

CONRAD H. HAMMAR

*University of Missouri*

*Research Memorandum on Social Aspects of Consumption in the Depression*, by Roland S. Vaile with the assistance of Helen G. Canoyer. New York: Social Science Research Council. 1937. Bulletin 35. Pp. vii, 86.

This monograph is one of a series of thirteen designed "to stimulate the study of depression effects on various social institutions." The author states as his objective, "the promotion and stimulation of research." His method is "to raise questions, review typical data bearing on these questions, point out gaps and imperfections, and suggest points at which new research is needed."

Since consumption is the subject of the monograph, it is necessary to define consumption and consumers. For this Adam Smith's statement that "consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to only so far as it may be necessary for promoting that of the consumer" is accepted. This separates the producer from the consumer rather than identifying them as the same person. Consideration is not given to the possibility that individuals can best improve their position as consumers by improving their position as producers. That the later is the common mode of functioning is suggested by pointing out that recent attempts to pass a more rigid food and drug act failed, while the Patman bill to protect dealers' margins and manufacturers' vested interests in particular brands of commodities was passed.

Besides defining consumption, the first chapter of the monograph deals with some of the difficulties involved in measuring changes in consumption. One of the easiest ways is to use data on money income. This, however, is subject to such difficulties as the changing purchasing power of money, and the fact that changes in money income may reflect only approximate changes in consumption. Moreover, much consumption is made possible by such services as those of the housewife which are not evident in monetary income. Governmental activity may result in changes in consumption which are not indicated by the changes in monetary income. One intangible that is said to be deserving of attention is "the differences in personal and social effects produced by activities carried out by individual initiative, on the one hand, and those that result from a socially planned program of consumption, on the other." A school of psychologists is said to claim "that satisfactions are related closely to efforts necessary for their attainment." Insofar as this relates to consumption made possible through governmental action as opposed to private enterprise, certainly further proof is called for. While the case may not exactly parallel W.P.A., certainly as much satisfaction is derived from driving over a state highway as from driving across a bridge which requires payment of a toll to private enterprise.

The second chapter reviews "typical data" on changes in income and consumption. It begins wisely with a "strong word of caution" to the effect that "Many of the data on which studies of the course of this and other depressions are being based are so inadequate in



scope and inexact in detail as to be positively misleading." This is further confirmed by the observations that better original data are the outstanding need and that there has been more facile statistical manipulation of available data than their completeness or exactness warrants. A wide variety of data dealing with national income, consumption of physical goods, recreation, family budgets, quality of merchandise, new commodities, consumer credit, and government expenditure are cited and briefly commented upon. These data are cited to indicate the type of material available for determining trends regarding consumption during the depression. Some interpretation of the data is indicated. No claim is made for completeness—the data are selected as illustrations of what is available.

The brief interpretations made of the data cited in Chapter II raise doubts as to the seriousness with which the author has taken the warning with which he started the chapter. All such doubts are dispelled by reading Chapter III on "Problems and Projects," the outstanding chapter of the monograph. It is to be hoped that no reader stops at the end of the second chapter. In the second chapter, brief reference is made to the fact that "national income paid out" was larger than "national income produced." From this reference it could be inferred that this was of undoubted significance. In Chapter III these concepts are critically examined and it is pointed out that the difference between "income produced" and "income paid out" might arise in any of a number of ways, one of which might be merely a manipulation of depreciation accounts. It is such vigorous criticism of concepts and statistical data that makes this final chapter worth while. In addition to such criticism, problems requiring further study and the agencies which could appropriately make the studies are suggested. Footnote references, seven pages of bibliographical suggestions, and an index enhance the value of the monograph.

DON S. ANDERSON

*University of Wisconsin*

*Our Trade with Britain—Bases for a Reciprocal Tariff Agreement*, by Percy Wells Bidwell. New York: Council on Foreign Relations. 1938. Pp. 129. \$1.50.

Professor Bidwell's treatise is not only an analysis of Anglo-American trade relations; it is a defense of the reciprocal trade

agreements program. It is written in a manner which will enable the layman to read and understand.

The foreign trade of the United States and the British Empire constitutes well over 40 per cent of the world's foreign trade. The United Kingdom is the greatest single taker of American exports and Canada is the greatest supplier of imports to the United States. Exports in 1937 to the United Kingdom exceeded by 200 million dollars our total sales during that year to all of South America. Recent shifts in England's foreign trade policy have markedly reduced the percentage of her imports coming from the United States, and increased her imports from Empire countries. These statements furnish ample indications of the importance of a trade agreement between these two political entities.

America, however, is not holding her own in world trade. Her share of world exports fell from 16.2 per cent in 1929 to 12.7 per cent in 1932. The major step in meeting this problem was the passage in 1933 of the reciprocal trade agreements act.

The effects of the agreements upon our trade do not lend themselves to ready analysis. The reduction in American duties are minor when measured in the light of our high tariff level. It is significant to note, however, that during the years 1934 to 1937 inclusive, imports from trade agreement countries have increased less rapidly than did imports from non-agreement countries, while the increase of exports to trade agreement countries was greater than the increase to non-agreement countries.

Roughly, four-fifths of the goods of English origin—not re-exports—entering the United States are subject to tariff duties. The duties are high. On the average in 1935, each dollar's worth of English goods entering this country paid a duty of 50.7 cents. The English duties on imports from the United States average around 20 per cent *ad valorem*. For the most part, and especially from the standpoint of agricultural exports, England's rate of duty is not nearly so important as the margin of preference granted the Empire countries. The result of the preferential duties has been marked increases in imports from the Dominions at the expense of non-empire countries.

England is our best customer. The United States is her largest supplier. The American tariff lays a heavy burden upon imports of English origin. Empire preference places distinct handicaps upon the sale of American products in the United Kingdom. The situa-

tion presents opportunities for improvements to the mutual advantages of both countries. The difficulties of concluding such a treaty are great. Will the United States be willing to make substantial reductions on significant items? Will the Dominions be willing to meet American producers on the British market on more nearly equal terms?

ASHER HOBSON

*University of Wisconsin*

*State and Federal Grants-in-Aid*, by Henry J. Bitterman. New York: Mentzer, Bush & Company, Chicago. 1938. Pp. 550. \$4.

This book represents a revision and bringing up to date of a doctoral dissertation presented to the Department of Economics of the University of Chicago in 1932. The author emphasizes the development and present description of state and federal grants-in-aid in the United States. A brief description of grants-in-aid in other countries is also included. The grant-in-aid is treated both from the standpoint of public administration and from the standpoint of public finance, and several chapters are devoted to each of these phases of the subject. Grants for schools, highways, and social security purposes are emphasized, and under each of these headings information is included concerning the individual states and the federal government. Considerable historic material is included which adds to the value of the current description and analysis.

The author gives a realistic description and appraisal of governmental grants-in-aid in this country. Some consideration is given to the distinction between grants-in-aid and shared revenues and to the comparative advantages of these two devices. The author includes under "grants-in-aid" any periodic payment from a central to a local government for a specified purpose or activity. The reviewer has never considered the term "grants-in-aid" in contradistinction to "shared revenues" as properly including the distribution of revenues such as those resulting from special shares of the motor vehicle fees and motor fuel taxes. It is recognized, however, that these revenues have much in common with those clearly to be classified as grants-in-aid and it seems that this book is more valuable with the broad definition than it would have been with a narrower one.

This book includes a vast amount of information concerning the history and present status of state and federal grants-in-aid.

It is difficult or impossible in such a study, which covers a large number of states to prevent errors in the interpretation of the laws of states in which the author has not had first-hand contact and experience. For example, minor errors have been made in the description of the highway grants-in-aid in New York, and the reviewer has not found any reference to certain significant legislation in New York which has made some of the highway grants available for other than highway purposes for limited periods of time. Such errors and omissions, however, are inevitable at the present stage of development of work in governmental administration and finance and do not seriously detract from the usefulness of this work.

Those particularly interested in grants-in-aid, either from a standpoint of public administration or public finance, should not fail to read this book. It will also be very useful to those with a more general interest in public administration or public finance. Some indication of the author's treatment of the subject may be gained from the concluding sentence in the book which reads as follows:

"While the grant-in-aid cannot be regarded as the only way of dealing with either the financial or the political and administrative problems arising from modern conditions, it is the most practicable way of reestablishing an equilibrium between central and local finance, and may be used as an important device for gradual improvement of state and local government and administration."

M. P. CATHERWOOD

*Cornell University*

*Economics of Agriculture*, by A. P. Van Der Post, Gordon V. Gotch, Ltd., Gordon House, 75 Farringdon St., London E. C. 4. Pp. 663. 25 shillings.

The author of this book is Assistant Chief of the Division of Economics and Markets in the Department of Agriculture and Forestry, Pretoria, Union of South Africa. He has pursued university study in South Africa, Holland, United States, Germany, and France.

The author states that the book is primarily intended for farmers and students of agriculture. The chapter headings are quite similar to those which would be found in standard college texts of the same title published in the United States. Throughout the text

emphasis is placed upon basic economic principles, "because," says the Author, "a proper understanding of the economic problems of agriculture cannot be obtained without a proper understanding of fundamental economic principles." Those principles he explains in simple language and easy style. The book, which reflects the author's cosmopolitan training, is well provided with examples of the application of these principles in practice drawn from both local and oversea sources. The frequent references to the works and thoughts of foreign students should make the book interesting to the American student.

Of special interest to the American reader should be the chapters on International Trade, Cycles and Agriculture, and Farm Relief. It is apparent that the author is not in accord with many of the policies now in effect which lead to the restriction of foreign trade; neither is he in accord with the general adoption of programs for the control of agricultural production.

J. I. FALCONER

*Ohio State University*

*Collectivism a False Utopia*, by William Henry Chamberlin. New York: The Macmillan Company. 1937. Pp. 265, \$2.00.

Pre-war trend was toward extending political, personal, and civil liberty. Post-war European history is one of severe and unbroken defeats for ideals of democracy, of individual liberty.

Hitler and Mussolini have only contempt for majority rule and envisage fascism as "trampling the decaying corpse of liberty." Lenin said there might be any number of parties in Russia—provided the communist party is in power, the rest in prison.

Modern-style revolution develops not when a government is oppressively strong, but when it is so weak as to be an easy prey for an organized minority with a desire to seize power, no scruples, plenty of machine guns.

Communism and fascism bulldoze as well as bamboozle, coerce and cajole. Their secret killings, wholesale brutality, and universal espionage break all but the strongest spirits; make impossible organized opposition. A part of the population becomes converted; another part learns to keep its collective mouth shut; obstinate dissidents are killed outright or cowed and crushed; and the credulous foreign visitor has unrivaled chances for making a fool of himself. Behind each of the three major experiments in the collec-

tivist state there is an element of fanatical enthusiasm which it is difficult, if not impossible, to measure accurately. Consequently, there is a pronounced tendency among liberals and radicals to create a curious double standard of morals in judging the Soviet Union and the rest of the world. The collectivist state is omnipotent, makes and breaks laws at will, has no worry from courts or constitutions, and relieves workers of the burden of defending their own rights.

The idea that collectivist states are short cuts to a utopian society is a mirage rather than reality. Russia, in the winter of 1932-1933, was in a vastly worse plight than the United States. The Russian looking back to 1919 had much more cause for complaint than an American doing likewise. The Russians, on plain evidence of Soviet statistics, are worse fed than under Tsarism two decades back. Purchasing power of monthly average wage of Soviet workers is about  $\frac{2}{3}$  of pre-war Russian wage. Living standard of Russian workers corresponds to that of the unemployed, rather than of the employed, in Great Britain and the United States.

Germany's cost of living rose by 15 to 20 per cent, while average industrial wage was reduced from 26 to 22 marks a week, by "taxes, insurance, dues and other contributions." Italian wages were reduced 40 to 50 per cent between 1923 and 1932, cost of living declining only 5 per cent. Wages are so low they can scarcely be reduced further, taxes so high they can scarcely be increased.

The people have been deprived of comforts and even of necessities to keep munitions factory wheels turning faster. Konrad Heiden observed, "The National Socialist state of the future rests upon general poverty, relieved by enthusiasm and maintained by terrorism." The only field in which the collective dictatorship appears to possess an advantage over democracy is in militarization and intensive rearmament.

The causes of class antagonism are not removed in the collectivist states; the symptoms are but driven underground. People do not cease to suffer from poverty and want; but they are obliged to cease complaining. Thus, according to Chamberlin, democracy is definitely on the defensive, although up to now it has only lost ground that was never very securely held. There appears little chance of its spread. Will it survive in those countries where it has rooted deepest? Let democracy lose one election to the forces of dictatorship, under circumstances of abnormal strain and crisis,



and it will have no chance to present its case for free consideration at another.

Mr. Strachey saw the world confronted by two alternatives—communism and barbarism (regarding barbarism as identical with fascism). That is no choice at all. For everything barbarous that is associated with fascism can be duplicated, and often surpassed, under communism.

Fortunately there is a more real alternative to barbarism than communism—liberty. Liberty or barbarism; this is indeed the choice before civilization. Patrick Henry's flaming phrase, liberty or death, is a sober statement of the alternative that confronts civilization in the twentieth century.

R. C. ASHBY

*University of Illinois*

## NEWS ITEMS

### *American Farm Economic Association*

The American Farm Economic Association will hold its 1938 meetings at Detroit, Michigan, on December 28, 29 and 30. As yet the headquarters hotel has not been selected. The program for the annual meeting will appear in the November issue of the JOURNAL.

American delegates to the Fourteenth General Assembly of the International Institute of Agriculture in Rome, May 23-29 included besides J. Clyde Marquis, Permanent Delegate of the United States, M. L. Wilson, Undersecretary of Agriculture, Charles E. Kellogg, Chief, Soil Survey Division, Bureau of Chemistry and Soils, A. G. Black, Chief, Bureau of Agricultural Economics, L. A. Wheeler, in charge of the Foreign Agricultural Service Division, Bureau of Agricultural Economics, Lloyd V. Steere, Agricultural Attache at Berlin, Germany, Louis G. Michael, Agricultural Attache at Belgrade, Yugoslavia, John K. Galbraith, instructor of economics at Harvard University, and C. L. Stewart, professor of agricultural economics, University of Illinois.

The Annual Indian Farm Management Association Tour will be held August 18 and 19. The group will visit the Louisville Land Bank and inspect the Moses Fell Annex Experiment Farm at Bedford, August 18. The next day stops will be made at three representative farms in southwestern Indiana.

R. L. Adams, Professor of Farm Management in the University of California, has been granted a leave of absence from the University to develop a statewide election in California for the purpose of approving or rejecting a grape prorate.

A Division of Transportation has been established in the Bureau of Agricultural Economics, which has been designated by Secretary Wallace as the agency to administer Section 201 of Title II of the Agricultural Adjustment Act of 1938 relating to the transportation of farm products. Dr. Ralph L. Dewey, formerly in charge of transportation studies at Ohio State University and associated with transportation activities in various Government agencies, is acting in charge of the new Division, effective July 1.

B. W. Bain, who has been a member of the staff of the Agricultural Economics Department, University of Illinois, this spring resigned to accept a position with the Milk Market Administration in St. Louis.

Henry H. Bakken of the Department of Agricultural Economics of the University of Wisconsin, together with his family, left early in June for a four-months trip to Europe. Most of his time will be

spent in a study of cooperative associations in Scandinavian countries.

Walter Bauer of the Economics Subdivision of the Farm Credit Administration will be in Italy, Germany, and Denmark in the late summer and fall, where he will study certain aspects of the agricultural credit systems of these countries. While in Italy, he plans to attend the First International Congress on Agricultural Credit to be held at Naples from October 18 to 22.

E. E. Briner, former Assistant Supervisor of Rural Research, Tennessee College of Agriculture, has resigned to accept a position with the Soil Conservation Service.

D. A. Broadbent, M.S., University of Illinois, 1938, has accepted a position in the Department of Agricultural Economics at the Utah State Agricultural College to become effective September 1.

Aubrey J. Brown, M.S., 1937, University of Illinois, has accepted a position in Agricultural Prices and Statistics at the University of Kentucky, to become effective September 1.

Leslie Max Brown has accepted a position as research assistant in the Department of Agricultural Economics, South Dakota State College, beginning July 1.

George W. Collier has transferred to the Soil Conservation Service after 16 years in farm management work in the Bureau of Agricultural Economics.

Phil S. Eckert of the Department of Economics, University of Montana, has accepted a position in the Department of Rural Economics, Ohio State University.

Archie C. Edwards, of the Foreign Agricultural Service Division, Bureau of Agricultural Economics, since 1929, has transferred to the position of Chief of the Division of Statistics, Civil Service Commission, effective August 1.

R. J. Eggert, who has been assistant at the University of Minnesota while taking graduate work in agricultural economics, has been appointed assistant professor at the Kansas State College.

The third unit of the Farm Bureau Farm Management Service Work in Illinois was organized centering in Galesburg, Illinois, with Burton E. King, B.S., University of Illinois, 1917, as the fieldman. This unit of about 230 farmers is unique in that it is the first organization in Illinois which is entirely self-supporting including funds to meet the clerical and miscellaneous expenses as well as the expenses of the fieldman.

During the four months period, March-June, 1938, J. William Firor was employed by the Extension Service, U. S. Department of Agriculture, for the purpose of making a study of the farm prob-

lems of the South. During this time he was on leave of absence from the University of Georgia.

Frank M. Fitzgerald, formerly in charge of Rural Electrification work for the Tennessee Power Company, has resigned to accept appointment as Assistant Supervisor of Rural Research, Tennessee College of Agriculture.

James M. Gray has taken the leadership of the Division of Land Utilization, Bureau of Agricultural Economics, after nearly three years service as regional director of Region IV.

B. H. Hibbard of the University of Wisconsin was one of the faculty members for the special Extension Service Summer School, Colorado State College, at Fort Collins, Colorado.

J. W. Johansen, Extension Economist in Marketing, Department of Agricultural Economics and Rural Sociology, N. C. State College of Agriculture, has been granted a leave of absence to pursue graduate studies in marketing. He will spend a part of the year at Cornell and Harvard Universities and a part studying the markets of New York and New England States.

S. O. Kessler, who has been with the Land Use Planning Division of the Bureau of Agricultural Economics in Indiana, has accepted the position of Extension Economist in Farm Management at Purdue University.

Paul L. Koenig has transferred from the Division of Land Acquisition, Bureau of Agricultural Economics, to the Division of Crop and Livestock Estimates, as assistant head of the Division with particular responsibility over the new market statistics section.

Henry Larzelere who received his Ph.D. degree at Wisconsin in June, has accepted a position with the Wisconsin Department of Agriculture and Markets.

Marc C. Leager, Professor in the Department of Agricultural Economics and Rural Sociology, N. C. State College of Agriculture will be associated with the Federal Land Bank of Columbia, South Carolina, during the summer for the purpose of studying the bank's experience with Farmers' Mutual Fire Insurance Companies. This is a part of comprehensive study of Farmers' Mutual Fire Insurance Companies in North Carolina.

J. K. Lee who has filled the vacancy created by the absence of Professor R. B. Westbrook resigned his position with the Department of Agricultural Economics, South Dakota State College.

A. B. Lewis will be on leave from the Farm Credit Administration from July 5 to August 12 to teach a summer course at Cornell University on Prices.

C. E. Lively, professor of Rural Sociology in the Department of

Rural Economics, Ohio State University, has resigned to accept the Chairmanship of the Department of Rural Sociology at the University of Missouri.

David F. MacFarlane who has been taking graduate work at Minnesota and Harvard, has become a member of the Department of Farm Economics at the University of Kentucky.

John N. Mahan, Graduate Assistant in the Department of Agricultural Economics University of Georgia during the 1937-38 session, has accepted a graduate fellowship in the department of Agricultural Economics at Louisiana State University, Baton Rouge, Louisiana.

The seventeenth annual summer tour of the Northwest Farm Managers Association was held July 6, 7 and 8, studying farm management practices in the northwest—in North Dakota and Minnesota. A one day's tour was taken jointly with the Minnesota State Farm Managers Association.

Calvin Olson, Assistant Agricultural Economist in the Experiment Station has resigned to accept employment with the Federal Land Bank and is stationed at Fargo, N. D.

H. B. Taylor, formerly with the Farm Management Department of Michigan State College, has accepted the position of Itinerant Vocational Teacher Trainer in Farm Management, in the Education Department at Purdue University.

W. Preston Thomas, Head of Department of Agricultural Economics, Utah State Agricultural College, has been granted a leave of absence to do graduate work and travel for the coming school year.

Harry Trelogan who has been instructor in agricultural economics at the University of Minnesota has accepted a position with the Cooperative Division of the Farm Credit Administration in Washington.

E. C. Voorhies has accepted the position of Assistant Dean of Undergraduates at the University of California for the academic year 1938-39.

R. B. Westbrook, who has been on leave of absence taking work for his Ph.D. degree at the University of Minnesota, will return to his position as Assistant Professor in the Department of Agricultural Economics, South Dakota State College, July 1.

Robin M. Williams, Assistant Rural Sociologist in the Department of Agricultural Economics and Rural Sociology, N. C. State College of Agriculture, has been granted a leave of absence for one year. Mr. Williams will pursue his graduate studies at Harvard University.